DOCUMENT RESUME

ED 086 810 CE 000 838

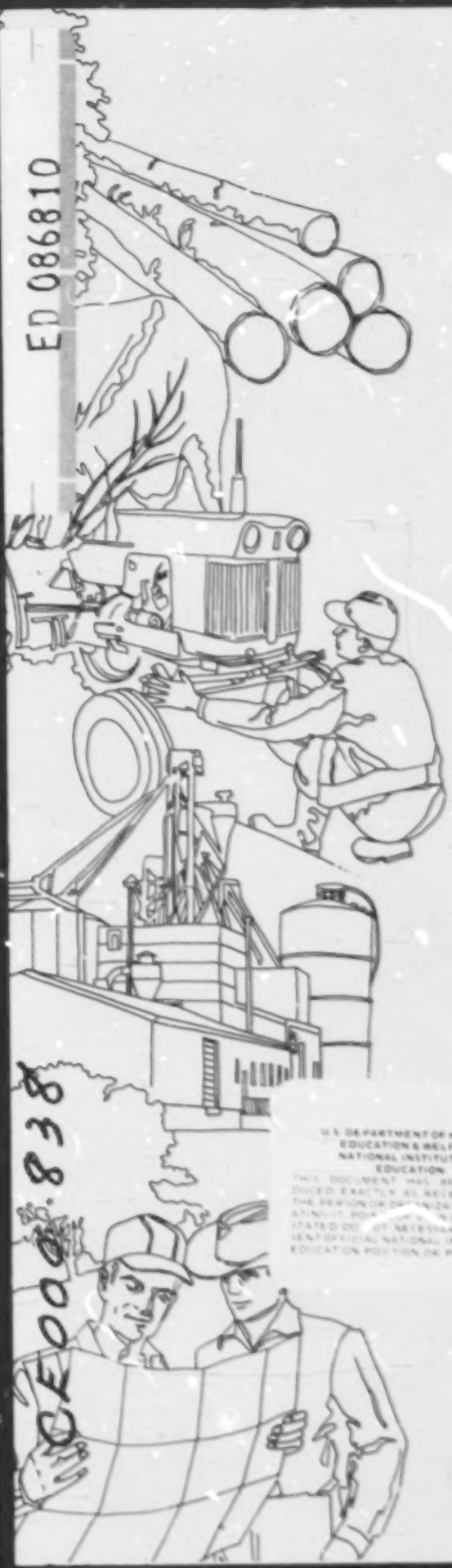
AUTHOR Donahoo, Alvin W.; And Others
TITLE A Study to Determine Competencies Needed by Employees Entering the Grain, Feed, and Seed Business.
INSTITUTION Montana State Univ., Bozeman. Montana Agricultural Experiment Station.
SPONS AGENCY Montana State Dept. of Public Instruction, Helena. Div. of Vocational and Occupational Skills.
PUB DATE Aug 72
NOTE 129p.; This document contains 92 leaves, many of which are 11 inches wide by 8 1/2 inches high and require two microfiche frames

EDRS PRICE MF-$0.65 HC-$6.58
DESCRIPTORS *Agribusiness; Agricultural Education; Business Skills; *Feed Industry; Feed Stores; Grains (Food); Labor Turnover; *Manpower Development; *Manpower Needs; *Off Farm Agricultural Occupations

ABSTRACT

The report is one of a series of four Agricultural Manpower Reports to quantify the nature and extent of employment opportunities associated with agribusiness and production agriculture in Montana in 1971 and predicted to 1974. Montana is a major grain-production state and has a large grain, feed, seed, and fertilizer complex offering a wide variety of jobs and requiring a range of knowledge and skills. The study of competencies needed in the grain, feed, and seed industry was a pilot effort to determine problems associated with such a study and to collect competency data from potential employers to establish programs in this area. If was found that competencies deemed important to educators did not correspond closely with those valued by local and regional agribusiness managers. Such personal qualities as liking people and willingness to work were considered important but competencies acquired agricultural courses ranked among the lowest. On the other hand, competencies acquired from nonproduction agriculture courses (e.g., grain grading, business operations, State and federal laws, financing, etc.) ranked highest. Both elevator managers and management respondents believe an effective course of instruction must include an occupational experience program. (MS)

ED 086810



A Study to Determine Competencies Needed by Employees Entering the Grain, Feed and Seed Business

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

CE 000 838

PUBLISHED BY DOLORES COLBURG,
SUPERINTENDENT OF PUBLIC INSTRUCTION

in cooperation with

die DEPARTMENT OF
AGRICULTURAL AND INDUSTRIAL EDUCATION
MONTANA STATE UNIVERSITY, BOZEMAN

COMPETENCIES

NEEDED BY EMPLOYEES ENTERING THE

GRAIN, FEED, SEED BUSINESS

Agricultural and Industrial Education Department
Montana State University
Bozeman, Montana

A STUDY

TO DETERMINE COMPETENCIES NEEDED

BY EMPLOYEES ENTERING THE

GRAIN, FEED, SEED BUSINESS

by

Dr. Alvin W. Donahoo

Dr. Max L. Amberson

Dr. Douglas Bishop

The work presented herein was performed by the Montana Agricultural Experiment Station and supported by the Office of Superintendent of Public Instruction, Division of Vocational and Occupational Skills

The Montana State University
Department of Agricultural and Industrial Education
Room 313, Linfield Hall, Bozeman, Montana
August, 1972

PREFACE

Preceding this report is a series of four Agricultural Manpower Reports in Agricultural Production and Agri-Business. These reports quantify the nature and extent of employment opportunities associated with agri-business and production agriculture in Montana during 1971 and predicted to 1974.

Findings indicate there will be an expansion in the work force in agri-business and production agriculture. As a second step and to serve as a guide for persons planning agricultural education in Montana, competency studies were initiated to determine specific knowledges and skills needed by agricultural workers. This study in the grain, feed and seed industry was initiated as a first or pilot effort to determine the problems associated with such a study and also to collect competency data needed to establish programs in this area.

The Department was fortunate to be able to enlist the services of Dr. Alvin Donahoo, Executive Vice President of the Minneapolis Grain Exchange to spearhead competency studies in his area of expertise.

Other competency studies in areas of agri-business and production will be pursued and will, in the main, follow the general format adopted in this study.

ACKNOWLEDGMENTS

The Agricultural and Industrial Education Department at Montana State University is indebted to Dr. Alvin Donahoo, Executive Vice President of the Minneapolis Grain Exchange for accepting a sub-contract to develop and validate competencies needed by employees entering the grain, feed, and seed industry.

In developing these competencies, it was essential to enlist the assistance of interested individuals, agencies, and organizations throughout Montana and in the neighboring states of North and South Dakota and Minnesota. Several agencies and organizations made specific contributions and should be recognized specifically. The Minneapolis Grain Exchange Executive Staff, Peavey Company and Farmers Union Grain Terminal Association employees, and the staff of the Atwood Larson Company were particularly helpful. The cooperation and assistance from the personnel of these agencies greatly facilitated this study.

TABLE OF CONTENTS

PREFACE iii

ACKNOWLEDGMENTS iv

LIST OF TABLES vi

SUMMARY 1

Purpose and Objectives. 1
Method and Procedure. 1
General Findings. 2

I. INTRODUCTION 3

Phase I Study 4
Purpose of the Grain Industry Study 5
Procedure 5

II. ANALYSIS OF THE DATA 9

Weighted Scores Comparisons 9
Part I - Grain and Seed 11
Part II - Feeds 18
Part III - Agricultural Chemicals and Fertilizers 23
Part IV - Business Management 27
Twenty-Four Competencies Ranked Highest by Manager and Management Respondents 33
Comparison of Competencies Ranked Highest by Educators, Elevator Managers and Management Respondents 37
Part V - Occupational Experience Program 40
A Comparison of Competencies by Percentages 41

III. CONCLUSIONS AND/OR OBSERVATIONS. 56

SELECTED REFERENCES. 61

APPENDIX A 64

LIST OF TABLES

TABLE		PAGE
1	Comparison of the Ranking of Competencies Given by Elevator Managers and Management Respondents--Part I - Grain and Seed	12
2	Comparison of the Ranking of Competencies Given by Elevator Managers and Management Respondents--Part II - Feeds	19
3	Comparison of the Ranking of Competencies Given by Elevator Managers and Management Respondents--Part III - Agricultural Chemicals and Fertilizers	24
4	Comparison of the Ranking of Competencies Given by Elevator Managers and Management Respondents--Part IV - Business Management .	28
5	A Comparison of the Twenty-Four Competencies Ranked Highest by Elevator Managers and Management Respondents	34
6	Twenty-Five Competencies Ranked Highest by Educators	38
7	A Comparison of Ratings Given Competencies by Elevator Managers, Management Supervisors and Educators--Grain and Seed	42
8	A Comparison of Ratings Given Competencies by Elevator Managers, Management Supervisors and Educators--Feeds.	46
9	A Comparison of Ratings Given Competencies by Elevator Managers, Management Supervisors and Educators--Agricultural Chemicals and Fertilizers	49
10.	A Comparison of Ratings Given Competencies by Elevator Managers, Management Supervisors and Educators--Business Management.	51
11.	A Comparison of Values of the Occupational Experience Program by Future Employees as Perceived by Elevator Managers, Management Supervisors and Educators--Occupational Experience. . . .	54
12.	A Comparison of Ratings of Benefits Received by Future Employees from Supervised Occupational Experience Programs As Perceived by Elevator Managers, Management Supervisors And Educators--Benefits.	55

SUMMARY

Purpose and Objectives

The grain industry constitutes the major part of the Agricultural Supplies/Services area in Montana. Therefore, a study was instituted to determine the essential competencies that employees should be able to demonstrate upon entering this segment of the Agricultural Supplies/Services business, as viewed by regional management of agri-business firms, elevator managers and educators who are providing classes for prospective employees.

The competencies as defined by potential employers were deemed important and will serve as a basis to revise existing curricula or to develop new courses of study. Any revised curriculum would strive to insure that students interested in entering the grain industry will have the competencies needed at the completion of their course of instruction. In addition to competency identification, another objective of the study was to determine how employers view the importance of incorporating an Occupational Experience Program in training for the grain, feed, and seed industry.

Methods and Procedures

Initially, a tentative list of competencies considered essential for prospective employees in the grain industry was compiled by Dr. Max L. Amberson, Head, Agricultural Education, Montana State University, Bozeman, Montana, and Dr. Alvin W. Donahoo, Secretary, Minneapolis Grain Exchange. Dr. Donahoo served as Consultant on Phase II of the Agricultural Manpower Project.

The tentative list of competencies was developed after a reveiw of the literature (see Selected References), interviews with top management of a number of agri-business firms, interviews with a number of educators training prospective employees and a review of the curricula and course content offered at area vocational technical schools. From each source, areas of competency were isolated. The information from these sources, combined with the consultant's twenty years of association with the grain industry, provided the basis for developing the tentative list of competencies.

Refinement of the tentative list of competencies resulted in a Preliminary Questionnaire to which reactions were solicited from a sample of regional managers, local managers and educators.

General Findings

An analysis of data from regional and local managers and educators teaching courses that prepare students for employment in the grain, feed and seed industry revealed the following:

1. Local and regional managers agreed that the competencies as validated by researchers were needed by new employees.
2. Local and regional managers placed great importance on certain personal qualities and attitudes.
3. Local and regional managers generally agree on the competencies needed by new employees.
4. Competencies deemed important by educators did not correspond closely with the competencies listed as being important by local and regional managers.

I

INTRODUCTION

Montana's farmers and ranchers received $643,000,000 in 1970 from the sale of agricultural products. Agriculture will continue to be Montana's number one income-producing industry for many years to come. Many agri-business firms are needed to provide materials and services for this agriculture production complex. These businesses serving Montana's number one income-producing industry offer many opportunities for employment in a variety of jobs.

There has never been a comprehensive analysis of current and projected manpower needs in the State. When manpower needs are known, the quality and availability of education can be improved to supply well-trained employees for current and emerging occupations. Such an analysis can serve the student by providing information concerning career opportunities within the State, hereby helping to reduce out-migration of both youth and adults. Likewise, the matching of manpower supply with manpower demand in the agricultural industry can increase the efficiency of the State's economy.

In Montana a five-phase, five-year Agricultural Manpower Project is being undertaken by the Agricultural and Industrial Education Department of Montana State University, funded by the Montana Agricultural Experiment Station and the Office of the Superintendent of Public Instruction. The purpose of the five-year project is to identify the occupational opportunities and the educational needs in Montana's agricultural industry and to design appropriate agricultural education to provide an adequate manpower force in agricultural production and agri-business sectors such as agricultural sales

and service, agricultural mechanics, agricultural products (milling and processing), agricultural resources, ornamental horticulture, and forestry.

Phase I Study

Phase I, an Agri-Business Survey and an Agri-Producers Survey, was completed in 1972. The purpose of the Phase I study was to determine the current and projected manpower needs. In the Agri-Business Survey job opportunities were classified in six areas:

1. Agricultural Supplies/Services
2. Agricultural Mechanics
3. Agricultural Products
4. Ornamental Horticulture
5. Agricultural Resources
6. Forestry

A total of 352 job vacancies was reported in 188 businesses in the six areas. Vacancies in service positions led all others, with 79 openings. Vacancies in sales positions were second, with a total of 55 openings.

The Agricultural Supplies/Services area represented 47 percent of all agricultural occupations in Montana. There are 3996 currently employed in this area, and 150 vacancies were reported. By 1975-76, it is estimated 4236 individuals will be employed in Agricultural Supplies/Services, a growth of 240 positions.

Job opportunities in the grain industry were classified under the Agricultural Supplies/Services Area. Montana is a major grain-producing state and has a large grain, feed, seed and fertilizer complex, offering a wide variety of job opportunities and requiring a range of knowledge and

skills. Thirty-one grain firms responded to the 1971-72 Agri-Business Survey, and these firms reported 59 current vacancies in the grain industry within the State of Montana. Phase I of the Agri-Business Survey revealed there were opportunities for employment, but the knowledge, skills and attitudes needed by employees were unknown.

Phase II of the five-year study is to determine knowledge, skills and attitudes needed by employees in Montana's total agricultural industry.

Purpose Of The Grain Industry Study

The grain industry is a major part of the Agricultural Supplies/Services area. Therefore, a study was instituted to determine the essential competencies that employees should demonstrate for entrance into this segment of the Agricultural Supplies/Services area, as viewed by regional management of agri-business firms, elevator managers and educators training prospective employees.

The competencies that the trade deems important will serve as a basis to revise existing curricula or to develop new courses of study. The revised, enriched course content will help to insure that students interested in entering the grain industry will have the competencies needed at the completion of their course of instruction. A minor objective was to determine how employers view the importance of incorporating an Occupational Experience Program into the educational program for future employees.

Procedure

Initially, a tentative list of competencies considered essential for prospective employees in the grain industry was compiled by Dr. Max L. Amberson,

Head, Agriculture Education, Montana State University, Bozeman, Montana, and Dr. Alvin W. Donahoo, Secretary, Minneapolis Grain Exchange. Dr. Donahoo served as Consultant on Phase II of the Agricultural Manpower Project.

The tentative list of competencies was developed after a review of the literature (See Selected References), interviews with top management of a number of agri-business firms, interviews with a number of educators training prospective employees and a review of the curricula and course content offered at area vocational technical schools. From each source, areas of competency were isolated. The information from these sources, combined with the Consultant's twenty years of association with the grain industry, provided the basis for developing the tentative list of competencies.

Refinement of the tentative list of competencies resulted in a Preliminary Competency Questionnaire. In the Questionnaire, the competencies were classified into five sections -- Grain and Seed, Feeds, Agricultural Chemicals and Fertilizer, Business Management, and Occupational Experience Program.

Persons in top management positions of agri-business firms (grain, seed, feed, chemicals and fertilizer) in the Minneapolis area were requested to complete the Preliminary Competency Questionnaire. The Minneapolis area was selected, since a number of the grain firms doing business in Montana have headquarters in Minneapolis, Minnesota. These individuals reviewed each competency list for the purpose of:

1. Evaluating how realistic it is for a prospective employee to have a particular competency
2. Making refinements in the listed competencies

3. Deleting competencies not considered relevant

4. Adding competencies considered relevant and not appearing on the original questionnaire

In the grain trade, Montana, North Dakota, South Dakota and the Red River Valley of Minnesota are considered as one area. The principal grains produced are the small grains -- wheat, barley, rye, oats, etc. The operating procedures of the elevators and their problems are similar. Many of the major grain firms have elevators or elevator accounts in all four states. Personnel may move from one position to another without regard to state boundaries. For these reasons this study has regional implications for training. Elevator managers, those engaged at a higher management level -- division managers, district superintendents, etc. -- and educators in the four-state area were asked to answer the Questionnaire. The sample was purposive and selected from the 500 such businesses that look to Minneapolis Grain Exchange in Minneapolis, Minnesota. The sample was selected by the researcher on advisements with management at the regional level.

The Preliminary Competency Questionnaire was completed by thirty-seven elevator managers. Twenty managers were from Montana, thirteen from North Dakota, three from South Dakota and one from Minnesota.

Twenty-one persons engaged in the grain industry at a higher-management level -- divisional managers, district superintendents, field men, etc. -- completed the same questionnaire. Six were from Montana, six from North Dakota, seven from Minnesota and two from South Dakota. Several of these people are giving management supervision to elevators in more than one state. These out of state respondents are identical to instate respondents as a

result of the interstate commonalities in this aspect of the grain industry.

Six carefully selected educators who are training or have been engaged in training prospective employees for the grain industry also completed the questionnaire. Although this is a rather small sampling of educators, it is representative of those actually engaged in teaching such programs.

All respondents rated each competency on a scale of 1 to 5; a rating of 1 was the figure assigned to no importance, and a rating of 5 was the number assigned to essential.

On Part V (OCCUPATIONAL EXPERIENCE PROGRAM), managers, supervisors and others checked YES or NO. Respondents rating the competencies also had the opportunity -- in fact, were encouraged -- to make additions if their experience indicated that important competencies had been omitted.

II

ANALYSIS OF THE DATA

The data were analyzed to determine how elevator managers, management respondents and educators rated the importance of each competency.

The number of educators requested to respond to the questionnaire, though limited, represented a cross section of educators involved in this type of training. Educators included were those teaching in local area vocational schools, supervisors of vocational programs at the state level and an educational supervisor of a national organization concerned with manpower training in the grain and feed industry.

Because of the limited number of educator respondents, the only detailed analysis made was to compare the twenty-five competencies ranked highest with the competencies ranked highest by manager and management respondents.

Weighted Score Comparisons

To determine if manager and management respondents hold vastly different views on the importance of each competency, a ranking system was used for comparison. Competencies on each part of the questionnaire were ranked in descending order by the use of a weighted score. The weighted score was determined by assigning a weight of 5 when a competency was rated "Essential," 4 when rated "Very Important," 3 when rated "Average Importance," 2 when rated "Some Importance" and 1 when rated "No Importance."

The highest weighted score elevator manager respondents could give any competency would be 185. To obtain a weighted score of this magnitude, all 37 elevator managers would have to rate a competency "Essential" (37 X 5 = 185). The lowest weighted score a competency could be given would be 37 (37 X 1 = 37).

All the elevator managers would have to rate a competency as having "No Importance" to obtain such a score.

The highest weighted score the management respondents could give a competency would be 105, and the lowest weighted score would be 21.

An inspection of each section gives the answer as to how each group of respondents ranked each competency. However, to determine if manager and management respondents hold different views on the relative importance of each competency requires a closer analysis. After the competencies were ranked in descending order, the top 20 percent and the bottom 20 percent of the competencies in each segment of the questionnaire were selected for comparison purposes.

PART I - GRAIN AND SEED

Of the 12 competencies (top 20 percent) ranked highest by both groups of respondents, 8 appeared on both lists. Four out of the 12 competencies appearing in the top 20 percent of the elevator manager list but not appearing on the management list were concerned with fire and safety. Management, on the other hand, emphasized grain grading, blending and grain storage. Of the 12 competencies (bottom 20 percent) ranked lowest by both groups, 10 out of the 12 appeared on both lists.

TABLE 1

COMPARISON OF THE RANKING OF COMPETENCIES GIVEN BY ELEVATOR MANAGERS AND MANAGEMENT RESPONDENTS

PART I
GRAIN AND SEED

Elevator Managers	Weighted Score	Management	Weighted Score
* 1. Draw a representative sample of grain from truck or car.	174	* 1. Price grain based on grade, weight and quality.	103
* 2. Price grain based on grade, weight and quality.	173	2. Grade grain according to USDA Grain Standards Act.	101
* 3. Detect and correct housekeeping practices that could cause fires.	172	3. Recommend and make proper bin preparation to insure safe storage of grain.	101
4. Quote grain prices to farmers.	172	* 4. Weigh grain as it arrives at the elevator.	101
* 5. Weigh grain as it arrives at the elevator.	171	* 5. Detect and correct housekeeping practices that could cause fires.	101
6. Use fire-fighting equipment provided.	171	* 6. Use balances, moisture testers, screens and dockage machines used in grading grain.	100
* 7. Use balances, moisture testers, screens and dockage machines used in grading grain.	169	* 7. Draw a representative sample of grain from truck or car.	100
* 8. Recommend moisture levels for safe storage of grain.	169	* 8. Identify various types of grain damage.	100
9. Detect and correct housekeeping practices that are safety hazards.	169	9. Blend various qualities of grain to meet grade.	100

* Competency appears on top 20 percent, both lists.

TABLE 1--Continued

*10.	Identify various types of grain damage.	167	*10.	Bin grain according to quality and condition.	100
11.	Properly place equipment to combat fire.	167	*11.	Recommend moisture levels for safe storage of grain.	100
*12.	Bin grain according to quality and condition.	166	12.	Determine moisture in grain.	99
13.	Prepare a scale ticket.	166	13.	Prepare a warehouse receipt.	99
14.	Select proper equipment to combat fire.	166	14.	Prepare a scale ticket.	99
15.	Determine moisture in grain.	165	15.	Prepare a Bill of Lading.	99
16.	Grade grain according to USDA Grain Standards Act.	164	16.	Identify and correct unsafe practices in grain-handling equipment.	99
17.	Prepare a warehouse receipt.	163	17.	Detect and correct housekeeping practices that are safety hazards.	99
18.	Identify materials that might contaminate grain because of odors.	161	18.	Identify sources of grain contamination and recommend complete programs of grain sanitation.	98
19.	Load a car or truck with grain for shipment.	158	19.	Identify materials that might contaminate grain because of odors.	98
20.	Treat grain properly and safely for insect control.	157	20.	Select proper equipment to combat fire.	98
21.	Determine the possible returns from different methods of selling grain.	155	21.	Properly place equipment to combat fire.	98
22.	Prepare a Bill of Lading.	15[illegible]	22.	Use fire-fighting equipment provided.	98

* Competency appears on top 20 percent, both lists.

TABLE 1--Continued

23.	Blend various qualities of grain to meet grade.	153	23.	Use aeration, drying and turning techniques to preserve grain quality.	98
24.	Identify sources of grain comtamination and recommend complete programs of grain sanitation.	152	24.	Operate and read devices for detecting heating of grain in storage (hot spots).	97
25.	Use aeration, drying and turning techniques to preserve grain quality.	152	25.	Treat grain properly and safely for insect control.	97
26.	Inspect grain containers to determine suitability for moving grain.	151	26.	Inspect grain containers to determine suitability for moving grain.	97
27.	Explain the relationship of cash grain prices to futures.	148	27.	Load a car or truck with grain for shipment.	97
28.	Identify and correct unsafe practices in grain-handling equipment.	148	28.	Operate seed-treating and seed-cleaning equipment.	97
29.	Recommend and make proper bin preparation to insure safe storage of grain.	145	29.	Determine the possible returns from different methods of selling grain.	96
30.	Operate seed-treating and seed-cleaning equipment.	143	30.	Quote grain prices to farmers.	96
31.	Operate and read devices for detecting heating of grain in storage (hot spots).	142	31.	Recommend weed control programs.	93
32.	Care for and maintain scales.	142	32.	Care for and maintain scales.	93
33.	Recommend crop varieties that will maximize returns in terms of yield and market acceptance.	140	33.	Label and market seed in accordance with state laws.	93

TABLE 1--Continued

34. Operate and adjust equipment commonly used in a grain, feed, seed and fertilizer facility.	140	34. Compute cost of drying grain.	92
35. Develop a hedging program appropriate for a country elevator.	138	35. Compute weight loss incurred in drying grain.	92
36. Compute weight loss incurred in drying grain.	135	36. Explain the relationship of cash grain prices to futures.	91
37. Recommend the kinds of equipment commonly needed in a grain, feed, seed and fertilizer facility.	134	37. Store seed to protect against moisture, insects, etc.	91
38. Store seed to protect against moisture, insects, etc.	133	38. Explain the basic parts of the Uniform Grain Storage Agreement.	90
39. Conduct various types of tests to determine protein in grain.	130	39. Prepare labels for teated seed to meet government regulations.	89
40. Label and market seed in accordance with state laws.	129	40. Operate and adjust equipment commonly used in a grain, feed, seed and fertilizer facility.	88
41. Recommend weed control programs.	125	41. Recommend crop varieties that will maximize returns in terms of yield and market acceptance.	88
42. Recommend accepted crop management practices to improve volume of grain produced.	124	42. Analyze seed samples and properly label for sale.	87
43. Compute cost of drying grain.	124	43. Identify seed-borne diseases.	86
44. Prepare labels for teated seed to meet government regulations.	124	44. Develop a hedging program appropriate for a country elevator.	85

TABLE 1--Continued

45.	Diagram an efficient facility layout for a modern grain, feed, seed and fertilizer operation.	122	45. Prepare seed to meet state certification laws.	84
46.	Identify weeds and weed seed commonly found in crops grown locally.	119	46. Recommend the kinds of equipment commonly needed in a grain, feed, seed and fertilizer facility.	83
47.	Explain the basic parts of the Uniform Grain Storage Agreement.	118	47. Develop a basis chart for various commodities.	82
48.	Analyze seed samples and properly label for sales.	115	48. Recommend accepted crop management practices to improve volume of grain produced.	81
49.	Develop a basis chart for various commodities.	114	49. Identify weeds and weed seed commonly found in crops grown locally.	80
**50.	Test seed for germination.	101	50. Conduct various types of tests to determine protein in grain.	79
51.	Prepare seed to meet state certification laws.	100	**51. Conduct field inspection for producing certified seed.	77
52.	Identify seed-borne diseases.	100	**52. Analyze costs and returns of such improvement projects as drainage, liming, fertilizer, etc.	76
**53.	Determine the adaptability of soils to crops to be grown.	95	**53. Determine the adaptability of soils to crops to be grown.	71
**54.	Prepare a budget, estimating cost of production and returns per acre of major crops produced in area.	93	54. Diagram an efficient facility layout for a modern grain, feed, seed and fertilizer operation.	71

** Competency appears bottom 20 percent, both lists.

TABLE 1--Continued

**55.	Explain crop adaptation in terms of factors related to soil, climate and economics.	92	**55. Test seed for germination. 71
**56.	Assist in planning alternative cropping systems.	90	**56. Determine from county crop reports potential volume of grain produced. 66
**57.	Analyze costs and returns of such improvement projects as drainage, liming, fertilizer, etc.	88	**57. Prepare a budget, estimating cost of production and returns per acre of major crops produced in area. 67
**58.	Conduct field inspection for producing certified seed.	86	**58. Recommend and make machinery adjustments which will result in harvesting quality grain. 67
**59.	Recommend and make machinery adjustments which will result in harvesting quality grain.	83	**59. Assist in planning alternative cropping systems. 64
**60.	Identify soil problems that may be due to lack of drainage or lack of water.	82	**60. Explain crop adaptation in terms of factors related to soil, climate and economics. 64
**61.	Determine from country crop reports potential volume of grain produced in elevator trade territory.	79	**61. Identify soil problems that may be due to lack of drainage or lack of water. 61

** Competency appears bottom 20 percent, both lists.

PART II - FEEDS

Of the 7 competencies (top 20 percent) ranked highest by both groups of respondents, 6 appeared on both lists. The two differing competencies (one on each list) have a striking similarity. Both are concerned about the substitution of feeds in compounding rations. Of the 7 competencies (bottom 20 percent) that ranked lowest, 5 out of the 7 are on both lists.

TABLE 2

COMPARISON OF THE RANKING OF COMPETENCIES GIVEN BY ELEVATOR MANAGERS AND MANAGEMENT RESPONDENTS

PART II
FEEDS

Elevator Managers	Weighted Score	Management	Weighted Score
* 1. Balance rations for different types of livestock and poultry of various ages.	123	* 1. Recommend feeding programs which will eliminate problems of chemical residues in meat, milk and eggs.	100
* 2. Recommend feeding programs which will eliminate problems of chemical residues in meat, milk and eggs.	122	2. Plan alternative feeding programs for different types of livestock using feeds available in the area.	98
* 3. Explain the purpose of feed additives and medications.	118	* 3. Formulate feeds so as to balance economically grains grown on the farm.	97
* 4. Formulate feeds so as to balance economically grains grown on the farm.	117	* 4. Recommend the use of additives and medications in compliance with FDA standards.	97
* 5. Determine feed needs in terms of nutrients for growth, production and reproduction.	116	* 5. Balance rations for different types of livestock and poultry of various ages.	96
* 6. Recommend the use of additives and medications in compliance with FDA standards.	116	* 6. Explain the purpose of feed additives and medications.	95
7. Substitute various feed ingredients in balancing rations.	114	* 7. Determine feed needs in terms of nutrients for growth, production and reproduction.	94

* Competency appears on top 20 percent, both lists.

TABLE 2--Continued

8.	Prepare a livestock or poultry feeding budget, estimating feed costs, value of product and return over feed costs.	112	8. Read and explain the meaning of ingredients listed on a feed tag. 93
9.	Determine suitability of feeds for ruminants, nonruminants.	112	9. Demonstrate the techniques for successful farm and ranch calls. 93
10.	Recommend feed additives and medications in relation to cost and suitability.	112	10. Prepare a livestock or poultry feeding budget, estimating feed costs, value of product and return over feed costs. 91
11.	Evaluate livestock quality and recommend compatible feeding programs.	110	11. Evaluate livestock quality and recommend compatible feeding programs. 91
12.	Identify hazards that may cause fire, injuries and poisoning to livestock and poultry.	108	12. Determine suitability of feeds for ruminants, nonruminants. 89
13.	Classify feeds in terms of nutrients and energy value.	107	13. Classify feeds in terms of nutrients and energy value. 89
14.	Compute feed required for pound of gain for each major livestock group.	107	14. Substitute various feed ingredients in balancing rations. 89
15.	Read and explain the meaning of ingredients listed on a feed tag.	106	15. Recommend feed additives and medications in relation to cost and suitability. 88
16.	Determine the quality of hay and silage in terms of feeding value (judgement, lab analysis, etc.)	105	16. Determine the form (pelleted, rolled, gound, etc.) in which feeds should be prepared for livestock and poultry. 87
17.	Plan alternative feeding programs for different types of livestock using feeds available in the area.	104	17. Compute feed required for pound of gain for each major livestock group. 87

TABLE 2--Continued

18.	Explain how environmental factors affect the feed efficiency of livestock enterprises.	104	18. Identify hazards that may cause fire, injuries and poisoning to livestock and poultry. 86
19.	Identify symptoms in animals and birds suffering from deficiencies of essential nutritive elements in feeding rations.	103	19. Identify and plan corrective measures for common livestock diseases and parasites. 85
20.	Demonstrate the techniques for successful farm and ranch calls.	102	20. Identify symptoms in animals and birds suffering from deficiencies of essential nutritive elements in feeding rations. 84
21.	Assist with planning alternative systems of livestock management.	99	21. Assist with planning alternative systems of livestock management. 83
22.	Identify economic and environmental factors that influence types of livestock and poultry which should be produced in an area.	97	22. Classify feeds according to mineral content. 83
23.	Plan and conduct feeding demonstrations.		23. Develop programs to eliminate potential hazards to livestock and poultry. 83
24.	Determine the form (pelleted, rolled, ground, etc.) in which feeds should be prepared for livestock and poultry.	96	24. Determine the quality of hay and silage in terms of feeding value (judgement, lab analysis, etc.). 82
25.	Identify and plan corrective measures for common livestock diseases and parasites.	96	25. Identify economic and environmental factors that influence types of livestock and poultry which should be produced in an area. 82
26.	Assist farmers and ranchers in determining the most economical weights to market livestock.	93	26. Plan and conduct feeding demonstrations. 80

TABLE 2--Continued

27.	Determine when livestock is ready for market.	93	27.	Assist farmers and ranchers in determining the most economical weights to market livestock.	79
**28.	Compute the conversion of nitrogen from nonprotein sources to protein.	92	28.	Explain how environmental factors affect the feed efficiency of livestock enterprises.	78
29.	Develop programs to eliminate potential hazards to livestock and poultry.	92	29.	Determine when livestock is ready for market.	75
30.	Classify feeds according to mineral content.	91	**30.	Trace the passage of feed through digestive processes of various animals.	72
**31.	Suggest how livestock producers can use the futures market as a market tool.	88	**31.	Suggest how livestock producers can use the futures market as a market tool.	72
**32.	Analyze feeds for fats, nitrogen, nitrogen-free extract, fiber and ash.	79	**32.	Analyze feeds for fats, nitrogen, nitrogen-free extract, fiber and ash.	70
**33.	Plan and develop mechanical feeding systems.	78	**33.	Plan and develop mechanical feeding systems.	67
**34.	Trace the passage of feed through digestive processes of various animals.	78	**34.	Compute the conversion of nitrogen from nonprotein sources to protein.	63

** Competency appears bottom 20 percent, both lists.

PART III - AGRICULTURAL CHEMICALS AND FERTILIZERS

In the top 20 percent of the competencies rated highest by managers and supervisors, four of the six appear on both lists. The two competencies upon which elevator managers placed a higher importance rating were interpret chemical labels and compute amounts of active ingredients of chemicals to be used. The two which supervisors gave the highest ratings were Determine relative amounts of different kinds and types of fertilizers to be applied per acre and Take soil samples for fertilizer analysis. In the 20 percent of the competencies ranked lowest by both groups, five out of the six appeared on both lists.

TABLE 3

COMPARISON OF THE RANKING OF COMPETENCIES GIVEN BY ELEVATOR MANAGERS AND MANAGEMENT RESPONDENTS

PART III

AGRICULTURAL CHEMICALS AND FERTILIZERS

Elevator Managers	Weighted Score	Management	Weighted Score
* 1. Recommend proper time to use chemicals.	147	* 1. Recommend a fertilizer program (timing, placement, etc.).	95
* 2. Time chemical applications to avoid residue problems.	142	* 2. Recommend proper time to use chemicals (weeds, crops, insects, etc.).	94
* 3. Recommend a safety program when working with fertilizers and chemicals.	142	3. Determine relative amounts of different kinds and types of fertilizers to be applied per acre.	93
* 4. Recommend a fertilizer program (timing, placement, etc.).	140	* 4. Recommend a safety program when working with fertilizers and chemicals.	92
5. Interpret chemical labels.	140	5. Take soil samples for fertilizer analysis.	92
6. Compute amounts of active ingredients of chemicals to be used.	140	* 6. Time chemical applications to avoid residue problems.	90
7. Determine relative amounts of different kinds and types of fertilizers per acre.	136	7. Compute costs and returns in determining the use of agricultural chemicals.	90
8. Interpret soil tests.	135	8. Interpret chemical labels.	89

* Competency appears on top 20 percent both lists.

TABLE 3--Continued

9.	Take soil samples for fertilizer analysis.	130	9.	Compute amounts of active ingredients of chemicals to be used. 89
10.	Formulate fertilizers to specification.	128	10.	Assist with planning alternative methods of fertilizer applications. 88
11.	Assist with planning alternative methods of fertilizer applications.	125	11.	Formulate fertilizers to specification. 88
12.	Recommend treatment to adjust pH to appropriate levels.	125	12.	Interpret soil tests. 88
13.	Store fertilizers to avoid storage problems.	125	13.	Store fertilizers to avoid storage problems. 86
14.	Recommend insecticides needed.	123	14.	Recommend insecticides needed. 86
15.	Explain the importance of soil pH to plant adaptability.	120	15.	Explain the importance of soil pH to plant adaptability. 85
16.	Name sources of information regarding laws and regulations governing the use of agricultural chemicals.	119	16.	Explain the function of various chemical elements in plant growth. 85
17.	Compute costs and returns in determining the use of agricultural chemicals.	118	17.	Name sources of information regarding laws and regulations governing the use of agricultural chemicals. 84
18.	Explain the function of various chemical elements in plant growth.	117	18.	Substitute fertilizer ingredients according to economic and agronomic conditions. 84
19.	Substitute fertilizer ingredients according to economic and agronomic conditions.	116	19.	Recommend treatment to adjust pH to appropriate levels. 83

TABLE 3--Continued

20.	Identify soil deficiencies from symptoms of growing plants.	116	20.	Identify soil deficiencies from symptoms of growing plants.	83
21.	Plan and conduct fertilizer and agricultural chemical demonstrations.	115	21.	Formulate herbicide-fertilizer mixtures.	82
22.	Test soils for pH levels.	111	22.	Plan and conduct fertilizer and agricultural chemical demonstrations.	82
23.	Calibrate farm implements to apply specific amounts of chemicals.	104	23.	Test soils for pH levels.	82
24.	Recondition fertilizers after lengthy storage.	104	24.	Calibrate farm implements to apply specific amounts of chemicals.	78
**25.	Identify and classify insect damage.	101	25.	Recondition fertilizers after lengthy storage.	78
**26.	Recommend treatment for animals and poultry suffering from parasites.	98	**26.	Identify and classify insect damage.	78
27.	Formulate herbicide-fertilizer mixtures.	96	**27.	Recommend treatment for animals and poultry suffering from parasites.	77
**28.	Weigh and measure relatively small quantities of chemicals.	93	**28.	Weigh and measure relatively small quantities of chemicals.	76
**29.	Explain the processes of manufacturing fertilizers.	82	**29.	Explain the processes of manufacturing fertilizers.	65
**30.	Post animals or birds to determine internal parasites.	49	**30.	Post animals or birds to determine internal parasites.	60

** Competency appears on the bottom 20 percent of both lists.

PART IV - BUSINESS MANAGEMENT

In this section there appears to be a wider divergence of opinion on the importance of certain competencies than was apparent in Parts I, II, and III. Of the 11 competencies (top 20 percent) ranked highest, only 6 appeared on both lists. Five out of the 11 competencies appearing in the top 20 percent of the elevator managers' list but not appearing on the management list concerned mainly customer relations or personal public relations on a one-to-one basis -- employee and the customer. Seeing the customer's point of view, using the telephone, projecting a desirable image for the firm and writing up a sales ticket ranked high in the eyes of the elevator managers. Management respondents, on the other hand, emphasized much broader objectives and concepts. The function of profits, objectives to promote business growth, use of goals to prepare budgets and techniques of closing a sale were ranked in the top 20 percent by management but not managers.

Of the 11 competencies (bottom 20 percent) ranked lowest by both groups, 8 appeared on both lists.

On the returned questionnaires, a number of respondents in both groups commented on the importance of public relations, projecting a desirable image for the firm and projecting a competent self-image. Apparently both groups of respondents were more concerned with attitudes and personal qualities desirable on a one-to-one basis with customers than with the skills needed to develop a company public relations program. Competencies that would aid a new employee in presenting demonstrations, writing advertising, preparing news releases, radio and TV scripts, making public speeches and designing displays all were ranked in the bottom 20 percent by both groups.

TABLE 4

COMPARISON OF THE RANKING OF COMPETENCIES GIVEN BY ELEVATOR MANAGERS AND MANAGEMENT RESPONDENTS

PART IV
BUSINESS MANAGEMENT

Elevator Managers	Weighted Score	Management	Weighted Score
* 1. Demonstrate the ability to get along with others.	175	* 1. Develop a sound credit policy for a grain, feed, seed and fertilizer business.	103
* 2. Develop a sound credit policy for a grain, feed, seed and fertilizer business.	17-	* 2. Demonstrate a willingness to work.	102
* 3. Demonstrate the ability to work on his own.	172	* 3. Demonstrate the ability to work on his own.	102
* 4. Demonstrate a willingness to work.	170	4. Close a sale.	100
5. Write up a sales ticket.	168	5. Understand the importance and the function of business profits.	99
6. Demonstrate the ability to project a desirable image for firm.	168	6. Use business goals for preparing a total business budget.	99
* 7. Understand the role of prices in the marketplace.	161	7. Develop objectives for the business that can be used by management to promote business growth.	98
8. Use the telephone for business transactions.	161	* 8. Understand the role of prices in the marketplace.	98

* Competency appears on top 20 percent, both lists.

TABLE 4--Continued

9.	Understand federal and state laws regarding grain, feed, seed and fertilizer business.	159	9.	Compute markup.	98
*10.	Compute margins.	159	*10.	Compute margins.	98
11.	See and respect the customer's point of view.	159	*11.	Demonstrate the ability to get along with others.	98
12.	Compute markup.	157	12.	Demonstrate the ability to project a desirable image for firm.	98
13.	Compute the cost of granting credit.	156	13.	Understand and be able to apply the basic principles of economics to distribution and marketing of grain, seed, feed and fertilizer.	97
14.	Evaluate financial statements to determine credit risks of farmers and ranchers.	153	14.	Write up a sales ticket.	97
15.	Understand and be able to apply the basic principles of economics to distribution and marketing of grain, seed, feed and fertilizer.	152	15.	See and respect the customer's point of view.	97
16.	Identify and recommend sources of credit available in the community.	152	16.	Understand federal and state laws regarding grain, feed, seed and fertilizer business.	96
17.	Understand the importance and the function of business profits.	151	17.	Prepare and interpret a financial statement for the business.	96
18.	Understand the legal responsibility of a business serving the public.	149	18.	Evaluate financial statements to determine credit risks of farmers and ranchers.	96
19.	Explain the relationship of markup to margin.	149	19.	Identify and recommend sources of credit available in the community.	95

* Competency appears on top 20 percent, both lists.

TABLE 4--Continued

20.	Empathize with the customer.	149	20.	Compute the cost of granting credit.	95
21.	Develop a system of inventory control.	147	21.	Explain the relationship of markup to margin.	95
22.	Locate sources of market information.	146	22.	Use the telephone for business transactions.	95
23.	Prepare and interpret a financial statement for the business.	144	23.	Empathize with the customer.	95
24.	Develop objectives for the business that can be used by management to promote business growth.	143	24.	Understand the sources of capital for each type of business.	94
25.	Understand the types of business organization.	142	25.	Explain and use contracts and other legal instruments needed in the business operation.	94
26.	Understand the sources of capital for each type of business.	142	26.	Understand the legal responsibility of a business serving the public.	92
27.	Interpret market information in market bulletins, newspapers and radio.	142	27.	Develop a system of inventory control.	92
28.	Understand how each type of business organization divides its profits or losses.	139	28.	Organize and conduct clinics for customers and staff members.	91
29.	Explain and use contracts and other legal instruments needed in the business operation.	137	29.	Locate sources of market information.	91
30.	Demonstrate the steps to successful selling.	136	30.	Interpret market information in market bulletins, newspapers and radio.	91
31.	Prepare a purchase order.	135	31.	Prepare letters to customers.	91

TABLE 4--Continued

32.	Understand the advantages and disadvantages of different types of business organization.	134	32. Organize a facility for effective merchandising. 91
33.	Use business goals for preparing a total business budget.	133	33. Understand how each type of business organization divides its profits or losses. 89
34.	Prepare clear, concise written reports.	131	34. Understand and be able to apply the basic requirements for starting a business. 89
35.	Understand and be able to apply the basic requirements for starting a business.	130	35. Organize and conduct sales meetings. 89
36.	Prepare letters to customers.	127	36. Prepare clear, concise written reports. 89
37.	Organize and conduct sales meetings.	125	37. Understand the advantages and disadvantages of different types of business organization. 88
38.	Demonstrate use of different types of sales techniques (telephone, face-to-face, etc.).	120	38. Estimate customer wants and needs from past records. 88
39.	Organize a facility for effective merchandising.	120	39. Demonstrate use of different types of sales techniques (telephones, face-to-face, etc.). 88
40.	Prepare an advertising budget.	119	40. Demonstrate the steps of successful selling. 88
41.	Plan and carry out promotion days.	113	41. Understand the types of business organization. 87
42.	Estimate customer wants and needs from past records.	112	42. Recognize potential customers identified from market studies. 87

TABLE 4--Continued

**43.	Develop an advertising calendar.	111	**43.	Prepare and present demonstrations.	87
44.	Close a sale.	111	**44.	Design displays.	87
**45.	Conduct a market survey.	108	45.	Prepare a purchase order.	86
**46.	Prepare and present demonstrations.	104	**46.	Conduct a market survey.	83
**47.	Prepare and present public speeches.	104	47.	Prepare an advertising budget.	83
48.	Organize and conduct clinics for customers and staff members.	100	**48.	Develop an advertising calendar.	82
**49.	Write advertising.	100	49.	Plan and carry out promotion days.	83
**50.	Design displays.	99	**50.	Prepare and present public speeches.	79
51.	Recognize potential customers identified from market studies.	93	**51.	Prepare news releases.	72
**52.	Prepare news releases.	88	**52.	Write advertising.	72
**53.	Prepare radio and TV scripts.	82	**53.	Prepare radio and TV scripts.	68

** Competency appears bottom 20 percent, both lists.

TWENTY-FOUR COMPETENCIES RANKED HIGHEST BY MANAGER AND MANAGEMENT RESPONDENTS

If competencies scored highest by both groups of respondents were selected without regard to the division of the questionnaire, would major differences on areas of importance exist? Of the 24 competencies ranked highest by both groups, there was agreement on the importance of 16 of the 24 (66 percent).

The 8 competencies that ranked in the top 24 on the elevator manager list, but not on the management list, fell into two areas: (1) concern for the safety of the plant as indicated by the high ranking of selecting, placing and using fire equipment and (2) importance of having the ability to work with the customer on a one-to-one basis. Elevator managers ranked high the ability to get along with others, quoting grain prices to farmers, writing up a sales ticket and projecting a desirable image for the firm.

The 8 competencies that were ranked in the top 24 by management respondents, but not by elevator managers, fell largely into two areas. Management respondents ranked high such broad concepts as function of profits and using established goals for budgeting. Other major areas of management concern were the safe storage of grain, blending for grade, preparing bills of lading, developing livestock feeding programs to eliminate chemical residue in meat, milk and eggs, and closing a sale. In addition, management ranked high correcting unsafe practices when working with grain-handling equipment.

TABLE 5

A COMPARISON OF THE TWENTY-FOUR COMPETENCIES RANKED HIGHEST BY ELEVATOR MANAGERS AND MANAGEMENT RESPONDENTS

Elevator Managers	Weighted Score	Management	Weighted Score
1. Demonstrate the ability to get along with others.	175	* 1. Develop a sound credit policy for a grain, feed, seed and fertilizer business.	103
* 2. Develop a sound credit policy for a grain, feed, seed and fertilizer business.	17-	* 2. Price grain based on grade, weight and quality.	103
* 3. Draw a representative sample of grain from truck or car.	17-	* 3. Demonstrate a willingness to work.	102
* 4. Price grain based on grade, weight and quality.	173	* 4. Demonstrate the ability to work on his own.	102
* 5. Demonstrate the ability to work on his own.	172	* 5. Grade grain according to USDA Grain Standards Act.	101
* 6. Detect and correct housekeeping practices that could cause fires.	172	6. Recommend and make proper bin preparation to insure safe storage of grain.	101
7. Quote grain prices to farmers.	172	* 7. Weigh grain as it arrives at the elevator.	101
* 8. Weigh grain as it arrives at the elevator.	17-	* 8. Detect and correct housekeeping practices that could cause fires.	101
9. Use fire-fighting equipment provided.	17-	* 9. Use balances, moisture testers, screens and dockage machines used in grading grain.	100

* Competency that appears in top 24, both lists.

TABLE 5--Continued

*10.	Demonstrate a willingness to work.	170	*10.	Draw a representative sample of grain from truck or car. 100
*11.	Use balances, moisture testers, screens and dockage machines used in grading grain.	169	*11.	Identify various types of grain damage. 100
*12.	Recommend moisture levels for safe storage of grain.	169	12.	Blend various qualities of grain to meet grade. 100
*13.	Detect and correct housekeeping practices that are safety hazards.	169	*13.	Bin grain according to quality and condition. 100
14.	Write up a sales ticket.	168	*14.	Recommend moisture levels for safe storage of grain. 100
*15.	Identify various types of grain damage.	167	15.	Close a sale. 100
16.	Properly place equipment to combat fire.	167	16.	Recommend feeding programs which will eliminate problems of chemical residues in meat, milk and eggs. 100
*17.	Bin grain according to quality and condition.	166	17.	Understand the importance and the function of business profits. 99
*18.	Prepare a scale ticket.	166	18.	Use business goals for preparing a total business budget. 99
19.	Select proper equipment to combat fire.	166	*19.	Determine moisture in grain. 99
*20.	Determine moisture in grain.	165	*20.	Prepare a warehouse receipt. 99
*21.	Grade grain according to USDA Grain Standards Act.	164	*21.	Prepare a scale ticket. 99

* Competency that appears in top 24, both lists.

TABLE 5--Continued

*22.	Prepare a warehouse receipt.	163	22.	Prepare a Bill of Lading. 99
23.	Demonstrate the ability to project a desirable image for firm.	162	23.	Identify and correct unsafe practices in grain-handling equipment. 99
24.	Identify materials that might contaminate grain because of odors.	161	*24.	Detect and correct housekeeping practices that are safety hazards. 99

* Competency that appears in top 24, both lists.

COMPARISON OF COMPETENCIES RANKED HIGHEST BY EDUCATORS, ELEVATOR MANAGERS AND MANAGEMENT RESPONDENTS

Competencies deemed important by educators did not correspond closely with the competencies listed as being important by local and regional managers. When the competencies ranked highest by educators were isolated and compared with competencies ranked highest by elevator managers and management respondents, there was agreement on only 11 competencies, or 45 percent. (There was a 66 percent agreement on the important competencies when a comparison was made between manager and management respondents.)

There was close agreement among all three groups on the importance of competencies concerned with handling, pricing and preparing grain for market, but on little else.

Educators ranked high competencies dealing with balancing rations for livestock, determing livestock feed needs, substitution of feed ingredients, taking and interpreting soil tests -- none of which appeared in the 24 top-ranked competency list by manager and management respondents.

Educators did not rank among the top competencies anything in the area of credit, financing, using business goals for preparing budgets and public relations of a one-to-one nature.

The competencies ranked highest by educators tended to be ones dealing with grain and feed. Manager and management respondents included on a comparable list many competencies that were in the area of management and, therefore, broader in nature.

TABLE 6

TWENTY-FIVE COMPETENCIES RANKED HIGHEST
BY EDUCATORS

!	1.	Quote grain prices to farmers.	29	+!	11. Prepare a scale ticket. 29
+!	2.	Draw a representative sample of grain from truck or car.	29		12. Formulate feeds so as to balance economically grains grown on the farm. 29
+!	3.	Identify various types of grain damage.	29		13. Trace the passage of feed through digestive processes of various animals. 29
+!	4.	Use balances, moisture testers, screens and dockage machines used in grading grain.	29		14. Determine suitability of feeds for ruminants, nonruminants. 29
+!	5.	Determine moisture in grain.	29		15. Determine feed needs in terms of nutrients for growth, production and reproduction. 29
	6.	Identify sources of grain contamination and recommend complete programs of grain sanitation.	29		16. Balance rations for different kinds of livestock and poultry of various ages. 29
+!	7.	Recommend moisture levels for safe storage of grain.	29		17. Read and explain the meaning of ingredients listed on a feed tag. 29
+!	8.	Bin grain according to quality and condition.	29		18. Substitute various feed ingredients in balancing rations. 29
+!	9.	Price grain based on grade, weight and quality.	29		19. Compute feed required for pound of gain for each major livestock group. 29
+!	10.	Weigh grain as it arrives at the elevator.	29		20. Take soil samples for fertilizer analysis. 29

+ Also ranked in top 24 competencies by management respondents.
! Also ranked in top 24 competencies by elevator manager respondents.

TABLE 6--Continued

21.	Interpret soil tests.	29	
22.	Understand the legal responsibility of a business serving the public.	29	
23.	Demonstrate use of different types of sales techniques (telephone, face-to-face, etc.).	29	
+24.	Close a sale.	29	
+!25.	Demonstrate a willingness to work.	29	

+ Also ranked in top 24 competencies by management respondents.
! Also ranked in top 24 competencies by elevator manager respondents.

PART V - OCCUPATIONAL EXPERIENCE PROGRAM

Thirty-one elevator managers and 18 in the management group rated the Occupational Experience Program as either "Very Important" or "Essential." No respondent rated the program as having "No Importance." The reasons given by respondents for considering the Occupational Experience Program an important part of employee training can be found in Table 12.

Educators also rated the Occupational Experience Program as being very important in training prospective employees. The reasons why educators considered the Occupational Experience Program important are found in Table 12.

The two reasons checked most often by elevator managers were "Provides an opportunity to learn activities that cannot be learned in the classroom" and "Provides an opportunity to evaluate traits as courtesy, loyalty, honesty, etc." The reasons checked most often by management respondents covered the opportunity to develop skills that cannot be learned in the classroom, the opportunity to demonstrate reliability, and the opportunity for management responsiblity.

Some respondents added such comments on the questicnnaire as: "This program is important if it is really a supervised program." Another suggested that the Occupational Experience Program would be more meaningful if it were given in the middle of the training course, rather than toward the end. Having the Occupational Training Program early would help make the classroom work more relevant to the student. Still another said, "It is one thing to tell and show how to do something, but it is quite different from actually doing it."

A COMPARISON OF COMPETENCIES BY PERCENTAGES

The competencies which the respondents ranked were not mutually exclusive, particularly in light of curriculum development. Each respondent felt that certain competencies were of greater importance than others. The difference of opinion among managers, supervisors and educators with regard to needed competencies was evident in the weighted scores presented in Table 7 through Table 12.

It was assumed that it would be useful to describe the rankings respondents gave to individual competencies in relationship to the rankings of other respondents. To arrive at a basis of comparison the rankings of each respondent on each competency was converted to a percentage. By comparing the frequency responses of managers, supervisors and educators, as expressed in percentages to the frequency count of each group of respondents, it is possible to describe the value each group of respondents placed on a particular competency.

A perusal of competency Number 21 entitled, "Draw a representative sample of grain from a truck or car," will indicate that 37 managers, 21 supervisors and 6 educators ranked the competency. The percentages reported show that 83 percent of the educators rated this competency as "essential". Thus, it would appear that all three groups of respondents felt this competency to be quite important to the success of an entry level worker in the grain, feed and seed industry.

A discussion of all competencies presented in the categories of grain and seed, business management, agricultural chemicals and fertilizers, feeds and occupational experience would be extremely voluminous. Therefore, the comparisons are presented here without discussion of specific competencies.

TABLE 7

A COMPARISON OF RATINGS GIVEN COMPETENCIES
BY ELEVATOR MANAGERS, MANAGEMENT SUPERVISORS AND EDUCATORS

KEY: M = MANAGERS
S = SUPERVISORS
E = EDUCATORS

COMPETENCIES
GRAIN AND SEED

Be Able To:	TOTAL PERSONS RESPONDING			NO IMPORTANCE-1*			SOME IMPORTANCE-2*			AVERAGE IMPORTANCE-3*			VERY IMPORTANT-4*			ESSENTIAL-5*		
	M	S	E	M	S	E	M	S	E	M	S	E	M	S	E	M	S	E
	37	21	6															
1. Determine from country crop reports potential volume of grain produced in elevator trade territory.	37	19	6	11	0	0	70	21	0	14	26	17	5	37	67	0	16	17
2. Recommend accepted crop management practices to improve volume of grain produced.	35	21	6	0	0	0	14	10	0	34	14	0	34	57	83	17	19	17
3. Recommend crop varieties that will maximize returns in terms of yield and market acceptance.	37	21	6	0	0	0	3	5	0	32	14	0	49	38	50	16	43	50
4. Prepare a budget, estimating cost of production and returns per acre of major crops produced in area.	37	21	6	22	5	0	32	19	0	27	38	0	11	29	67	8	10	33
5. Assist in planning alternative cropping systems.	37	21	6	22	5	0	24	24	0	43	38	17	11	29	50	0	5	33
6. Recommend and make machinery adjustments which will result in harvesting quality grain.	37	21	6	19	5	0	49	24	17	22	38	33	11	14	50	0	19	0
7. Determine the adaptability of soils to crops to be grown.	37	21	6	16	0	0	24	19	0	49	33	17	8	38	50	3	10	33
8. Explain crop adaptation in terms of factors related to soil, climate and economics.	37	21	6	11	0	0	40	33	0	38	38	17	11	19	50	0	10	33
9. Identify soil problems that may be due to lack of drainage or lack of water.	37	21	6	24	0	0	38	33	0	30	43	17	8	24	50	0	0	33
10. Analyze costs and returns of such improvement projects as drainage, liming, fertilizer, etc.	37	21	6	27	0	0	27	14	0	27	33	17	19	29	83	0	24	0
11. Identify weeds and weed seed commonly found in crops grown locally.	37	21	6	8	0	0	8	0	0	46	38	0	30	43	33	8	[illegible]	67
12. Recommend weed control programs.	36	21	6	6	0	0	8	0	0	31	10	0	44	38	33	11	52	67
13. Diagram an efficient facility layout for a modern grain, feed, seed and fertilizer operation.	37	21	6	14	0	0	40	19	0	32	29	17	11	48	83	3	5	0
14. Recommend the kinds of equipment commonly needed in a grain, feed, seed and fertilizer facility.	37	21	6	8	0	0	32	5	0	32	24	17	24	43	83	3	29	0
15. Operate and adjust equipment commonly used in a grain, feed, seed and fertilizer facility.	37	21	6	3	0	0	11	0	17	19	24	0	40	33	33	27	43	50

* Ratings in percentages given by persons in job titles in elevator management, management supervision and education.

TABLE 7--Continued

Be Able To:	TOTAL PERSONS RESPONDING			NO IMPORTANCE-1*			SOME IMPORTANCE-2*			AVERAGE IMPORTANCE-3*			VERY IMPORTANT-4*			ESSENTIAL-5*		
	M	S	E	M	S	E	M	S	E	M	S	E	M	S	E	M	S	E
	37	21	6															
16. Determine the possible returns from different methods of selling grain.	37	21	6	0	0	0	3	0	0	13	14	17	46	14	50	38	71	33
17. Explain the relationship of cash grain prices to futures.	37	21	6	0	0	0	5	0	0	22	19	0	40	29	33	32	52	67
18. Develop a hedging program appropriate for a country elevator.	35	21	6	0	0	0	9	5	0	17	33	17	46	14	17	29	48	67
19. Develop a basis chart for various commodities.	37	21	6	3	0	0	27	5	0	40	33	0	19	29	50	11	33	50
20. Quote grain prices to farmers.	37	20	6	0	0	0	0	0	0	5	5	0	24	10	17	70	85	83
21. Draw a representative sample of grain from truck or car.	37	21	6	0	0	0	3	0	0	5	0	0	11	24	17	81	76	83
22. Identify various types of grain damage.	37	21	6	0	0	0	3	0	0	5	5	0	30	14	17	62	81	83
23. Grade grain according to *USDA Grain Standards* Act.	37	21	6	0	0	0	0	0	0	11	5	0	35	10	33	54	86	67
24. Conduct various types of tests to determine protein in grain.	37	21	6	8	10	0	14	0	17	16	29	0	43	29	17	19	33	67
25. Use balances, moisture testers, screens and dockage machines used in grading grain.	36	21	6	0	0	0	0	0	0	6	5	0	19	14	17	75	81	83
26. Determine moisture in grain.	37	21	6	0	0	0	0	0	0	8	5	0	22	19	17	70	76	83
27. Compute cost of drying grain.	37	21	6	11	0	0	13	0	0	30	19	17	22	24	17	24	57	67
28. Compute weight loss incurred in drying grain.	36	21	6	8	0	0	8	0	0	11	19	0	44	24	50	28	57	50
29. Identify sources of grain contamination and recommend complete programs of grain sanitation.	36	21	6	0	0	0	0	0	0	17	5	0	44	24	17	39	71	83
30. Identify materials that might contaminate grain because of odors.	37	21	6	0	0	0	0	0	0	8	5	0	49	24	50	43	71	50
31. Recommend moisture levels for safe storage of grain.	37	21	6	0	0	0	0	0	0	8	5	0	27	14	17	65	81	83
32. Bin grain according to quality and condition.	37	21	6	0	0	0	0	0	0	11	0	0	30	24	17	59	76	83
33. Prepare a warehouse receipt.	36	21	6	0	0	0	3	0	0	8	5	0	22	19	33	67	76	67
34. Use aeration, drying and turning techniques to preserve grain quality.	37	21	6	0	0	0	3	0	17	22	14	0	38	24	33	38	62	50

TABLE I--Continued

Be Able To:	TOTAL PERSONS RESPONDING M	S	E	NO IMPORTANCE-1* M	S	E	SOME IMPORTANCE-2* M	S	E	AVERAGE IMPORTANCE-3* M	S	E	VERY IMPORTANT--4* M	S	E	ESSENTIAL-5* M	S	E
	37	21	6															
35. Operate and read devices for detecting heating of grain in storage (hot spots).	37	21	6	0	0	0	5	0	17	24	24	0	51	24	17	19	62	67
36. Price grain based on grade, weight and quality.	37	21	6	0	0	0	0	0	0	5	0	0	22	10	17	73	90	83
37. Treat grain properly and safely for insect control.	37	21	6	3	0	0	0	0	0	11	5	0	43	29	33	43	67	67
38. Recommend and make proper bin preparation to insure safe storage of grain.	37	21	6	0	0	0	3	0	0	35	10	0	30	19	83	32	71	17
39. Care for and maintain scales.	37	21	6	0	0	0	5	0	0	24	10	0	51	38	50	19	52	50
40. Weigh grain as it arrives at the elevator.	37	21	6	0	0	0	3	0	0	3	5	0	24	10	17	70	86	83
41. Prepare a scale ticket.	37	21	6	0	0	0	5	0	0	5	10	0	24	10	17	65	81	83
42. Blend various qualities of grain to meet grade.	36	21	6	0	0	0	3	0	0	19	5	17	28	14	33	50	81	50
43. Inspect grain containers to determine suitability for moving grain.	36	21	6	0	0	0	3	0	0	19	10	0	33	19	33	44	71	67
44. Load a car or truck with grain for shipment.	37	21	6	0	0	0	5	0	17	14	10	0	30	19	50	51	71	33
45. Prepare a Bill of Lading.	37	21	6	0	0	0	8	0	17	16	10	0	27	10	33	49	81	50
46. Explain the basic parts of the Uniform Grain Storage Agreement.	36	21	6	6	0	0	19	0	0	33	24	17	25	24	50	17	52	33
47. Conduct field inspection for producing certified seed.	37	21	6	27	5	0	32	14	17	27	48	33	8	24	17	5	10	33
48. Prepare seed to meet state certification laws.	37	21	6	24	5	0	24	5	17	27	24	0	5	19	33	19	48	50
49. Store seed to protect against moisture, insects, etc.	36	21	6	6	0	0	14	0	0	19	24	0	28	19	50	33	57	50
50. Test seed for germination.	37	21	6	16	5	0	32	14	0	27	48	17	11	5	50	14	29	33
51. Operate seed-treating and seed-cleaning equipment.	36	21	6	6	0	0	3	0	0	19	10	0	33	19	67	39	71	33
52. Identify seed-borne diseases.	37	21	6	19	0	0	22	0	0	38	33	0	14	24	50	8	43	50
53. Prepare labels for treated seed to meet government regulations.	37	21	6	8	0	0	27	5	0	14	19	0	24	24	33	27	52	67
54. Label and market seed in accordance with state laws.	36	21	6	8	0	0	19	5	0	8	14	0	33	14	33	31	67	67

TABLE 7--Continued

Be Able To:	TOTAL PERSONS RESPONDING			NO IMPORTANCE-1*			SOME IMPORTANCE-2*			AVERAGE IMPORTANCE-3*			VERY IMPORTANT-4*			ESSENTIAL-5*		
	M	S	E	M	S	E	M	S	E	M	S	E	M	S	E	M	S	E
	37	21	6															
55. Analyze seed samples and properly label for sale.	37	21	6	8	0	0	30	10	0	22	14	0	24	29	50	16	48	50
56. Identify and correct unsafe practices in grain-handling equipment.	37	21	6	0	0	0	8	0	0	19	0	0	38	29	67	35	71	33
57. Detect and correct housekeeping practices that could cause fires.	37	21	6	0	0	0	3	0	0	3	0	0	22	19	67	73	81	33
58. Select proper equipment to combat fire.	37	21	6	0	0	0	3	0	0	5	0	0	32	33	50	59	67	50
59. Properly place equipment to combat fire.	37	21	6	0	0	0	0	0	0	8	0	0	32	33	33	59	67	67
60. Use fire-fighting equipment provided.	37	21	6	0	0	0	0	0	0	8	0	0	22	33	50	70	67	50
61. Detect and correct housekeeping practices that are safety hazards.	36	21	6	0	0	0	0	0	0	6	0	0	19	29	33	75	71	67

TABLE 8

A COMPARISON OF RATINGS GIVEN COMPETENCIES
BY ELEVATOR MANAGERS, MANAGEMENT SUPERVISORS AND EDUCATORS

KEY: M = MANAGERS
S = SUPERVISORS
E = EDUCATORS

COMPETENCIES
FEEDS

Be Able To:	TOTAL PERSONS RESPONDING			NO IMPORTANCE-1*			SOME IMPORTANCE-2*			AVERAGE IMPORTANCE-3*			VERY IMPORTANT-4*			ESSENTIAL-5*		
	M	S	E	M	S	E	M	S	E	M	S	E	M	S	E	M	S	E
	37	21	6															
1. Prepare a livestock or poultry feeding budget, estimating feed costs, value of product and return over feed costs.	32	21	6	6	0	0	6	0	0	31	5	17	44	57	50	13	38	33
2. Evaluate livestock quality and recommend compatible feeding programs.	32	21	6	9	0	0	13	0	0	19	5	0	44	57	67	16	38	33
3. Assist with planning alternative systems of livestock management.	33	21	6	9	0	0	15		0	48	19	17	21	67	83	6	14	0
4. Plan and develop mechanical feeding systems.	32	21	6	19	0	0	28	19	17	47	48	17	3	29	67	3	5	0
5. Plan alternative feeding programs for different types of livestock using feeds available in the area.	31	21	6	6	0	0	10	0	0	39	14	0	32	33	33	13	52	67
6. Formulate feeds so as to balance economically grains grown on the farm.	32	21	6	6	0	0	6	0	0	19	5	0	53	29	17	16	67	83
7. Determine the quality of hay and silage in terms of feeding value (judgment, lab analysis, etc.).	31	20	6	10	0	0	13	0	0	26	20	0	32	50	33	19	30	67
8. Identify economic and environmental factors that influence types of livestock and poultry which should be produced in an area.	32	21	6	6	0	0	22	0	0	38	29	0	31	52	50	3	19	50
9. Explain how environmental factors affect the feed efficiency of livestock enterprises.	32	20	6	6	0	0	9	0	0	41	30	17	41	50	33	3	20	50
10. Trace the passage of feed through digestive processes of various animals.	32	21	6	22	0	0	25	14	0	41	38	0	13	38	17	0	10	83
11. Determine suitability of feeds for ruminants, nonruminants.	32	21	6	6	0	0	9	5	0	25	14	0	47	33	17	13	48	83
12. Determine the form (pelleted, rolled, ground, etc.) in which feeds should be prepared for livestock and poultry.	32	21	6	3	0	0	13	0	0	34	29	0	41	29	50	9	43	50
13. Determine feed needs in terms of nutrients for growth, production and reproduction.	32	21	6	6	0	0	6	0	0	34	14	0	25	24	17	28	62	83

* Ratings in percentages given by persons in job titles in elevator management, management supervision and education.

TABLE 8--Continued

Be Able To:	TOTAL PERSONS RESPONDING			NO IMPORTANCE-1*			SOME IMPORTANCE-2*			AVERAGE IMPORTANCE-3*			VERY IMPORTANT-4*			ESSENTIAL-5*		
	M	S	E	M	S	E	M	S	E	M	S	E	M	S	E	M	S	E
	37	21	6															
14. Balance rations for different types of livestock and poultry of various ages.	32	21	6	3	0	0	6	0	0	25	10	0	34	24	33	31	67	83
15. Classify feeds in terms of nutrients and energy value.	32	21	6	9	0	0	6	0	0	38	19	0	34	38	33	13	43	67
16. Classify feeds according to mineral content.	32	21	6	9	0	0	22	0	0	44	29	0	25	48	33	0	24	67
17. Analyze feeds for fats, nitrogen, nitrogen-free extract, fiber and ash.	33	21	6	21	0	0	30	29	0	36	29	33	12	24	33	0	19	33
18. Compute the conversion of nitrogen from nonprotein sources to protein.	31	20	6	10	0	0	23	25	0	36	45	0	26	20	50	6	10	50
19. Read and explain the meaning of ingredients listed on a feed tag.	32	21	6	3	0	0	6	0	0	34	14	0	41	29	17	16	57	83
20. Substitute various feed ingredients in balancing rations.	33	21	6	9	0	0	3	0	0	33	10	0	42	57	17	12	33	83
21. Compute feed required for pound of gain for each major livestock group.	31	21	6	6	0	0	3	0	0	42	19	0	36	48	17	13	33	83
22. Recommend feed additives and medications in relation to cost and suitability.	32	20	6	6	0	0	0	0	0	41	20	0	44	20	50	9	60	50
23. Explain the purpose of feed additives and medications.	32	21	6	3	0	0	3	0	0	25	5	0	59	38	50	9	57	50
24. Recommend the use of additives and medications in compliance with FDA standards.	31	21	6	3	0	0	3	0	0	32	5	0	39	29	33	23	67	67
25. Recommend feeding programs which will eliminate problems of chemical residues in meat, milk and eggs.	32	21	6	3	0	0	6	0	0	25	5	0	38	14	33	28	81	67
26. Identify symptoms in animals and birds suffering from deficiencies of essential nutritive elements in feeding rations.	32	21	6	6	0	0	16	0	0	31	29	0	44	43	67	3	29	33
27. Identify and plan corrective measures for common livestock diseases and parasites.	31	21	6	3	0	0	19	5	0	48	24	0	23	33	67	6	38	33
28. Identify hazards that may cause fire, injuries and poisoning to livestock and poultry.	32	21	6	3	0	0	9	0	0	44	33	0	34	24	33	9	43	67
29. Develop programs to eliminate potential hazards to livestock and poultry.	31	21	6	6	0	0	16	0	0	55	33	0	19	38	83	3	29	17

TABLE 8--Continued

Be Able To:	TOTAL PERSONS RESPONDING			NO IMPORTANCE-1*			SOME IMPORTANCE-2*			AVERAGE IMPORTANCE-3*			VERY IMPORTANT-4*			ESSENTIAL-5*		
	M	S	E	M	S	E	M	S	E	M	S	E	M	S	E	M	S	E
	37	21	6															
30. Plan and conduct feeding demonstrations.	32	21	6	3	0	0	16	5	0	59	29	0	19	48	67	3	19	33
31. Assist farmers and ranchers in determining the most economical weights to market livestock.	32	21	6	3	0	0	28	10	0	44	19	0	25	57	100	0	14	0
32. Determine when livestock is ready for market.	34	21	6	9	0	0	26	14	0	47	24	0	18	52	100	0	10	0
33. Suggest how livestock producers can use the futures market as a market tool.	32	21	6	9	0	0	25	19	0	47	33	0	19	33	83	0	14	17
34. Demonstrate the techniques for successful farm and ranch calls.	30	21	6	0	0	0	23	0	0	27	5	0	37	48	67	13	48	33

TABLE 9

A COMPARISON OF RATINGS GIVEN COMPETENCIES
BY ELEVATOR MANAGERS, MANAGEMENT SUPERVISORS AND EDUCATORS

KEY: M = MANAGERS
S = SUPERVISORS
E = EDUCATORS

COMPETENCIES
AGRICULTURAL CHEMICALS AND FERTILIZERS

Be Able To:	TOTAL PERSONS RESPONDING			NO IMPORTANCE-1*			SOME IMPORTANCE-2*			AVERAGE IMPORTANCE-3*			VERY IMPORTANT-4*			ESSENTIAL-5*		
	M	S	E	M	S	E	M	S	E	M	S	E	M	S	E	M	S	E
	37	21	6															
1. Compute costs and returns in determining the use of agricultural chemicals.	36	21	6	3	0	0	14	0	0	44	19	0	31	33	33	8	48	67
2. Name sources of information regarding laws and regulations governing the use of agricultural chemicals.	36	21	6	0	0	0	19	0	0	42	43	17	28	14	17	11	43	67
3. Recommend a fertilizer program (timing, placement, etc.).	36	21	6	0	0	0	3	0	0	31	10	0	42	29	50	25	62	50
4. Recommend proper time to use chemicals (weeds, crops, insects, etc.).	37	21	6	0	0	0	3	0	0	24	10	0	46	33	33	27	57	67
5. Time chemical applications to avoid residue problems.	36	21	6	0	0	0	3	0	0	31	24	0	36	24	33	31	52	67
6. Determine relative amounts of different kinds and types of fertilizers to be applied per acre.	36	21	6	0	0	0	8	0	0	22	19	0	53	19	33	17	62	67
7. Assist with planning alternative methods of fertilizer applications.	36	21	6	0	0	0	11	0	0	36	24	0	47	33	50	6	43	50
8. Explain the processes of manufacturing fertilizers.	36	21	6	25	0	0	25	33	0	47	38	50	3	14	33	0	14	17
9. Formulate fertilizers to specification.	36	21	6	8	0	0	14	5	0	8	14	0	53	38	50	17	43	50
10. Formulate herbicide-fertilizer mixtures.	33	21	6	9	0	0	24	5	0	33	29	0	33	38	33	0	29	67
11. Substitute fertilizer ingredients according to economic and agronomic conditions.	36	21	6	3	0	0	22	5	0	25	19	0	50	48	50	0	29	50
12. Plan and conduct fertilizer and agricultural chemical demonstrations.	35	21	6	3	0	0	17	5	0	40	29	0	34	38	67	6	29	33
13. Recommend a safety program when working with fertilizers and chemicals.	36	21	6	0	0	0	8	5	0	8	14	0	64	19	33	19	62	67
14. Take soil samples for fertilizer analysis.	36	21	6	3	0	0	14	0	0	25	10	0	36	43	17	22	48	83
15. Interpret soil tests.	36	21	6	0	0	0	17	5	0	19	14	0	36	38	17	28	43	83
16. Test soils for pH levels.	35	21	6	0	0	0	34	10	0	23	29	17	34	24	33	9	38	50

* Ratings in percentages given by persons in job titles in elevator management, management supervision and education.

TABLE 9--Continued

Be Able To:	TOTAL PERSONS RESPONDING			NO IMPORTANCE-1*			SOME IMPORTANCE-2*			AVERAGE IMPORTANCE-3*			VERY IMPORTANT-4*			ESSENTIAL-5*		
	M	S	E	M	S	E	M	S	E	M	S	E	M	S	E	M	S	E
	37	21	6															
27. Recommend treatment to adjust pH to appropriate levels.	36	21	6	3	0	0	17	10	0	22	24	0	47	29	33	11	38	67
28. Explain the importance of soil pH to plant adaptability.	36	21	6	3	0	0	11	5	0	42	29	0	39	24	50	6	43	50
29. Explain the function of various chemical elements in plant growth.	36	21	6	6	0	0	11	10	0	39	14	17	42	38	50	3	38	33
30. Identify soil deficiencies from symptoms of growing plants.	36	21	6	0	0	0	14	10	0	56	14	0	25	48	50	6	29	50
31. Interpret chemical labels.	36	21	6	0	0	0	6	0	0	25	14	0	44	48	33	25	38	67
32. Compute amounts of active ingredients of chemicals to be used.	36	21	6	0	0	0	6	0	0	22	19	0	50	38	33	22	43	67
33. Weigh and measure relatively small quantities of chemicals.	36	21	6	17	0	0	33	14	0	33	33	0	8	29	33	8	24	67
34. Calibrate farm implements to apply specific amounts of chemicals.	36	21	6	6	0	0	31	5	0	36	43	0	19	29	33	8	24	67
35. Recondition fertilizers after lengthy storage.	36	21	6	3	0	0	28	10	0	50	38	17	17	24	50	3	29	33
36. Store fertilizers to avoid storage problems.	36	21	6	0	0	0	6	5	0	42	24	17	53	29	17	0	43	67
37. Post animals or birds to determine internal parasites.	32	21	6	69	10	0	13	24	17	16	43	17	3	19	50	0	5	17
38. Recommend treatment for animals and poultry suffering from parasites.	33	21	6	6	5	0	24	5	0	42	33	33	21	33	50	6	24	17
39. Identify and classify insect damage.	33	21	6	3	0	0	21	5	0	45	38	0	27	38	50	3	19	50
40. Recommend insecticides needed.	33	21	6	3	0	0	6	5	0	24	14	0	48	48	33	18	33	67

TABLE 10

A COMPARISON OF RATINGS GIVEN COMPETENCIES
BY ELEVATOR MANAGERS, MANAGEMENT SUPERVISORS AND EDUCATORS

KEY: M = MANAGERS
S = SUPERVISORS
E = EDUCATORS

COMPETENCIES
BUSINESS MANAGEMENT

Be Able To:	TOTAL PERSONS RESPONDING			NO IMPORTANCE-1*			SOME IMPORTANCE-2*			AVERAGE IMPORTANCE-3*			VERY IMPORTANT-4*			ESSENTIAL-5*		
	M	S	E	M	S	E	M	S	E	M	S	E	M	S	E	M	S	E
	37	21	6															
Organization																		
1. Understand the types of business organization.	37	21	6	0	0	0	5	0	0	27	29	0	46	29	50	22	43	50
2. Understand the advantages and disadvantages of different types of business organization.	37	21	6	0	0	0	3	0	0	43	24	0	43	33	50	11	43	50
3. Understand the sources of capital for each type of business.	37	21	6	0	0	0	3	0	0	22	5	0	65	43	50	11	52	50
4. Understand how each type of business organization divides its profits or losses.	37	21	6	0	0	0	5	0	0	30	19	0	49	38	50	16	43	50
5. Understand the importance and the function of business profits.	37	21	6	0	0	0	11	0	0	16	5	0	27	19	33	46	76	67
6. Understand and be able to apply the basic requirements for starting a business.	37	21	6	2	0	0	8	0	0	38	19	0	36	38	83	14	43	17
7. Understand and be able to apply the basic principles of economics to distribution and marketing of grain, seed, feed and fertilizer.	37	21	6	0	0	0	3	0	0	22	0	0	38	38	50	38	62	50
8. Understand the legal responsibility of a business serving the public.	37	21	6	0	0	0	3	0	0	19	14	0	51	33	17	27	52	83
9. Understand federal and state laws regarding grain, feed, seed and fertilizer business.	37	21	6	0	0	0	3	0	0	11	5	0	41	33	50	46	62	50
10. Develop objectives for the business that can be used by management to promote business growth.	37	21	6	0	0	0	0	0	17	38	0	0	38	33	33	24	67	50
11. Use business goals for preparing a total business budget.	37	21	6	3	0	0	8	0	17	38	0	0	30	29	33	22	71	50
12. Understand the role of prices in the marketplace.	37	21	6	0	0	0	0	0	0	11	0	0	46	33	33	43	67	67
13. Prepare and interpret a financial statement for the business.	37	21	6	3	0	0	0	0	17	32	5	0	35	33	17	30	62	67

* Ratings in percentages given by persons in job titles in elevator management, management supervision and education.

TABLE 10--Continued

Be Able To:	TOTAL PERSONS RESPONDING M	S	E	NO IMPORTANCE-1* M	S	E	SOME IMPORTANCE-2* M	S	E	AVERAGE IMPORTANCE-3* M	S	E	VERY IMPORTANT-4* M	S	E	ESSENTIAL-5* M	S	E
	37	21	6															
Credit and Sales Techniques																		
14. Develop a sound credit policy for a grain, feed, seed and fertilizer business.	37	21	6	0	0	0	0	0	0	3	0	17	24	10	0	73	90	83
15. Identify and recommend sources of credit available in the community.	37	21	6	0	0	0	0	0	0	24	5	0	41	38	67	35	57	33
16. Compute the cost of granting credit.	37	21	6	0	0	0	0	0	0	14	0	0	51	48	50	35	52	50
17. Evaluate financial statements to determine credit risks of farmers and ranchers.	37	21	6	0	0	0	0	0	0	14	0	0	46	43	50	41	57	50
18. Estimate customer wants and needs from past records.	37	21	6	0	0	0	3	0	0	41	19	0	54	43	50	3	38	50
19. Conduct a market survey.	37	21	6	0	0	0	32	5	0	43	24	0	24	43	83	0	29	17
20. Recognize potential customers identified from market studies.	37	21	6	11	0	0	27	0	0	24	14	0	38	57	67	0	29	33
21. Organize and conduct clinics for customers and staff members.	37	21	6	24	0	0	11	0	0	35	14	0	30	38	67	0	48	33
22. Prepare and present demonstrations.	37	21	6	16	0	0	14	0	0	46	24	0	22	38	67	3	38	33
23. Organize and conduct sales meetings.	37	21	6	5	0	0	3	0	0	46	24	0	41	29	50	5	48	50
24. Demonstrate use of different types of sales techniques (telephone, face-to-face, etc.).	37	21	6	3	0	0	19	0	0	38	24	0	32	33	17	8	43	83
25. Demonstrate the steps of successful selling.	37	21	6	0	0	0	3	5	0	32	14	0	59	38	50	5	43	50
26. Locate sources of market information.	37	21	6	0	0	0	3	0	0	19	24	0	59	19	50	19	57	50
27. Interpret market information in market bulletins, newspapers and radio.	37	21	6	0	0	0	5	0	0	24	14	0	51	38	50	19	48	50
28. Prepare clear, concise written reports.	37	21	6	0	0	0	8	0	0	35	19	0	51	38	50	5	43	50
29. Prepare and present public speeches.	37	21	6	8	0	0	27	5	0	41	43	0	24	24	50	0	29	50
30. Prepare radio and TV scripts.	37	21	6	27	5	0	27	14	0	43	43	17	3	29	67	0	10	17
31. Prepare news releases.	37	21	6	22	0	0	27	14	0	46	38	17	3	38	67	3	10	17
32. Prepare letters to customers.	37	21	6	3	0	0	8	0	0	41	5	0	41	57	50	8	38	50

TABLE 10--Continued

Be Able To:	TOTAL PERSONS RESPONDING M	S	E	NO IMPORTANCE-1* M	S	E	SOME IMPORTANCE-2* M	S	E	AVERAGE IMPORTANCE-3* M	S	E	VERY IMPORTANT-4* M	S	E	ESSENTIAL-5* M	S	E
	37	21	6															
33. Organize a facility for effective merchandising.	36	21	6	0	0	0	14	0	0	31	10	0	47	48	67	8	43	33
34. Develop a system of inventory control.	37	21	6	0	0	0	3	0	0	22	14	0	51	33	50	24	52	50
35. Compute markup.	37	21	6	0	0	0	0	0	0	5	5	0	65	24	50	30	71	50
36. Compute margins.	37	21	6	0	0	0	0	0	0	5	5	0	59	24	50	35	71	50
37. Explain the relationship of markup to margin.	36	21	6	0	0	0	3	0	0	8	10	0	61	29	50	28	62	50
38. Prepare an advertising budget.	37	21	6	0	0	0	16	5	17	51	24	0	27	43	33	5	29	50
39. Develop an advertising calendar.	37	21	6	3	0	0	27	0	17	43	33	0	22	43	50	5	24	33
40. Write advertising.	37	21	6	11	0	0	32	14	0	38	48	17	14	19	67	5	19	17
41. Plan and carry out promotion days.	37	21	6	0	0	0	27	5	0	41	24	0	32	43	67	0	29	33
42. Design displays.	36	21	6	11	0	0	25	5	0	44	38	0	17	43	67	3	14	33
43. Explain and use contracts and other legal instruments needed in the business operation.	37	21	6	0	0	0	5	0	0	38	5	17	32	43	17	24	52	67
44. Prepare a purchase order.	37	21	6	0	0	0	5	10	0	41	19	17	38	24	17	16	48	67
45. Close a sale.	36	21	6	0	0	0	3	0	0	0	5	0	61	14	17	36	81	83
46. Write up a sales ticket.	37	21	6	0	0	0	0	0	0	5	14	17	35	10	0	59	76	83
Personal																		
47. Demonstrate a willingness to work.	37	21	6	0	0	0	0	0	0	0	0	0	41	14	17	59	86	83
48. Demonstrate the ability to work on his own.	37	21	6	0	0	0	0	0	0	0	0	0	35	14	33	65	86	67
49. Demonstrate the ability to get along with others.	37	21	6	0	0	0	0	0	0	0	0	0	27	33	33	73	67	67
50. Demonstrate the ability to project a desirable image for firm.	36	21	6	0	0	0	0	0	0	11	0	0	28	33	33	61	67	67
51. Use the telephone for business transactions.	37	21	6	0	0	0	0	0	0	14	10	0	4:	29	33	46	62	67
52. Empathize with the customer.	36	21	6	0	0	0	6	0	0	14	5	0	42	38	33	39	57	67
53. See and respect the customer's point of view.	36	21	6	0	0	0	0	0	0	8	5	0	42	29	33	50	67	67

TABLE 11

A COMPARISON OF VALUES OF THE OCCUPATIONAL EXPERIENCE PROGRAM
BY FUTURE EMPLOYEES AS PERCEIVED
BY ELEVATOR MANAGERS, MANAGEMENT SUPERVISORS AND EDUCATORS

KEY: M = MANAGERS
S = SUPERVISORS
E = EDUCATORS

OCCUPATIONAL EXPERIENCE

	TOTAL PERSONS RESPONDING			NOT IMPORTANT *			VERY IMPORTANT *			ESSENTIAL *		
	M	S	E	M	S	E	M	S	E	M	S	E
	37	21	6									
A supervised occupational experience program is (check one)	31	18	6	0	0	0	68	56	50	32	44	50

* Ratings in percentages given by persons in job titles in elevator management, management supervision and education.

TABLE 12

A COMPARISON OF RATINGS OF BENEFITS RECEIVED BY FUTURE EMPLOYEES FROM SUPERVISED OCCUPATIONAL EXPERIENCE PROGRAMS AS PERCEIVED BY ELEVATOR MANAGERS, MANAGEMENT SUPERVISORS AND EDUCATORS

KEY: M = MANAGERS
S = SUPERVISORS
E = EDUCATORS

BENEFITS	TOTAL PERSONS RESPONDING			YES *			NO *		
	M	S	E	M	S	E	M	S	E
	37	21	6						
1. Provides an employer an opportunity to evaluate employee-employer relationships.	34	21	6	94	95	83	6	5	17
2. Offers a student an opportunity for exploration experience.	35	21	6	83	95	100	17	5	0
3. Offers a student an opportunity for some management responsibilities.	34	21	6	91	100	83	9	0	17
4. Provides a student the opportunity to demonstrate reliability.	35	21	6	94	100	100	6	0	0
5. Provides a student an opportunity to learn activities that cannot be learned in the classroom.	37	21	6	100	100	100	0	0	0
6. Gives the student an opportunity to demonstrate initiative.	36	20	6	89	95	100	11	5	0
7. Provides an opportunity to evaluate a student's attitude concerning dress and grooming.	35	19	6	72	95	83	29	5	17
8. Provides an opportunity to evaluate how a student applies himself to the job.	37	20	6	95	100	100	5	0	0
9. Provides an opportunity to evaluate a student's attitude toward work.	36	20	6	97	100	100	3	0	0
10. Provides an opportunity to evaluate such traits as courtesy, loyalty, honesty, etc., in a prospective employee.	37	20	6	100	90	100	0	10	0
11. Provides the student with the opportunity to experience, under actual conditions, what it is to work in an agribusiness.	36	20	6	100	100	100	0	0	0
12. Provides the student the opportunity to learn new skills.	37	20	6	78	90	100	22	10	0
13. Provides the student the opportunity to manage his own time and the time of others.	37	18	6	76	89	100	24	11	0
14. Provides the student the opportunity to make judgment decisions.	36	20	6	89	95	100	11	5	0
15. Provides the student the opportunity to assume responsibility.	35	20	6	89	95	100	11	5	0
16. Provides the student the opportunity to search for ways to increase productivity.	34	19	6	71	89	83	29	11	17
17. Provides the opportunity to demonstrate a respect for excellence in performance.	34	19	6	94	95	100	6	5	0
18. Provides the student with the opportunity to demonstrate loyalty to the firm and to fellow employees.	35	19	6	83	84	100	17	16	0
19. Provides the student the opportunity to demonstrate a willingness to dress in a manner acceptable to an employer.	35	19	6	83	89	83	17	11	17
20. Provides the student the opportunity to demonstrate the essentials of good grooming.	35	19	6	77	84	100	23	16	0

* Ratings in percentages given by persons in job titles in elevator management, management supervision and education.

III

CONCLUSIONS AND/OR OBSERVATIONS

1. The Questionnaire Covered The Competencies Needed By New Employees.

   Both manager and management respondents apparently agree that the competencies needed by new employees were included on the questionnaire. Only fifteen added competencies were suggested by these respondents. Some respondents suggested that competencies such as dealing with laboratory tests, treating livestock diseases, farm machinery adjustment be left to the experts in the field available to assist when such skills are needed.

2. Certain Personal Qualities And Attitudes Are Important.

   Both groups of respondents placed great importance on such personal qualities as liking people, willingness to work hard, willingness to work and an optimistic attitude. These qualities and attitudes can be strengthened through a training program, but the basic elements must be present long before the student enrolls in the program. These inherent qualities suggest the importance of a selection and testing process that will, to some degree, measure these qualities prior to student enrollment.

3. There Is General Agreement By Manager And Management Respondents On Competencies Needed By New Employees.

   When competencies were ranked by a weighted score, there was a high degree of agreement by both elevator manager and management respondents as to

the competencies considered most important and least important. Young men who wish to enter the grain, seed, feed, chemical and fertilizer business should study this list of competencies carefully in deciding if they have a real interest in working in the industry.

The major difference of opinion between the two groups of respondents is significant. Elevator managers ranked high many competencies that concern one-to-one relationships between employees and customers. As one respondent said, "Knowing the customer is the most important asset of the business."

Management respondents, on the other hand, ranked high competencies concerning the broad areas of profits, objectives for business growth, establishing goals for budgeting, etc. It would seem a training program should expose a prospective employee to both points of view because of the close relationship between the apparent difference of emphasis. New jobs depend on profits, which depend on attracting, serving and holding customers. Customers cannot long be served unless goals are established to use wisely both financial and human resources. Wise use of resources is possible by developing objectives for business growth, which, in turn, better serves the customer and the employee.

4. The Competencies Deemed Important By Educators Did Not Correspond Closely With Competencies Listed As Being Important By Local and Regional Managers.

When the scores given by educators were compared with the competencies ranked highest by local and regional managers, educators agreed on only

11 or 45 percent of the competencies. Educators tended to rank agricultural production areas higher than they did the managerial areas as credit, financing, budgeting and public relations.

This conclusion points up the need for instructors to continue to use advisory councils in order to keep them abreast of what management feels important to include in an educational program.

5. The Competencies Acquired Through Agricultural Courses Ranked Among The Lowest.

Competencies that a student might acquire from strictly agricultural courses, such as crop production, soils and animal production, or competencies that might be considered important to a production specialist, were among those ranked lowest in importance by both groups. This conclusion should not be interpreted that a knowledge of production agriculture is unimportant. Elevator employees working with producers must be knowledgeable and conversant with the problems of those they serve. However, to those who are planning courses of instruction, the low ranking of these competencies does point out that agricultural production-oriented courses should not be offered at the expense of courses definitely related to the operation of the business. Instructors need more than a background in production agriculture if they are to train employees for this segment of agri-business.

Another area that was ranked low by both groups dealt with those competencies that would provide some of the tools for a formal public re-

lations program. Respondents apparently consider these competencies unneeded by new employees. Again, this lower ranking should not be interpreted that respondents do not consider public relations important. They seemed to place public relations emphasis on the one-to-one relationship with customers.

6. The Competencies Acquired From Nonproduction Agriculture Courses Ranked Among The Highest.

Competencies that might be acquired from courses that include grain grading, business operations which include handling of grain, fertilizer, seed and equipment operation, safety, state and federal laws and regulations, financing, budgeting, business planning and economics were ranked highest in importance by respondents. This ranking emphasizes the need respondents feel for competencies in the solution of day to day business problems.

It would seem that first priority should be placed on offering courses of instruction designed to develop skills in this area. Instructors must combine a strong business background with agriculture if they hope to be effective. These instructors must be fully familiar with problems of the trade if they expect the trade to look to them for trained manpower.

7. The Occupational Experience Program Is Vital.

Both elevator managers and management respondents believe an effective course of instruction must include an Occupational Experience Program. The reasons given were many. This is the "learning by doing" part of

the program. There are needed skills that cannot be taught in the classroom. A student cannot know if this area of employment is really for him until he has had exposure to the job.

It would seem that there is merit in offering the Occupational Experience Program early in the course. First of all, the early exposure helps to make classroom instruction more relevant. Second, if a student finds that he is not suited for this type of employment, he has the option of withdrawing before time and money are invested.

SELECTED REFERENCES

The following material proved helpful in developing the Competency Questionnaire:

1. The Center for Research and Leadership Development in Vocational and Technical Education, Career Opportunities In Agricultural Sales and Service, Module No. 1. Columbus, Ohio: The Ohio State University, 1965.

2. The Center for Research and Leadership Development in Vocational and Technical Education, Orientation To The Supervised Occupational Experience Program, Module No. 2. Columbus, Ohio: The Ohio State University, 1965.

3. The Center for Research and Leadership Development in Vocational and Technical Education, Human Relations in Agricultural Occupations, Module No. 3. Columbus, Ohio: The Ohio State University, 1965.

4. The Center for Research and Leadership Development in Vocational and Technical Education, Agricultural Salesmanship, Module No. 4. Columbus, Ohio: The Ohio State University, 1965.

5. The Center for Research and Leadership Development in Vocational and Technical Education, Organizations and Functions of Agricultural Businesses, Module No. 5. Columbus, Ohio: The Ohio State University, 1965.

6. The Center for Research and Leadership Development in Vocational and Technical Education, Business Procedures, Module No. 6. Columbus, Ohio: The Ohio State University, 1965.

7. The Center for Research and Leadership Development in Vocational and Technical Education, Feeds: Sales and Service, Module No. 7. Columbus, Ohio: The Ohio State University, 1965.

8. The Center for Research and Leadership Development in Vocational and Technical Education, Crop, Lawn, & Garden Seeds Sales and Service, Module No. 8. Columbus, Ohio: The Ohio State University, 1965.

9. The Center for Research and Leadership Development in Vocational and Technical Education, Fertilizers: Sales and Service, Module No. 9. Columbus, Ohio: The Ohio State University, 1965.

10. The Center for Research and Leadership Development in Vocational and Technical Education, Agricultural Chemicals: Sales and Service, Module No. 10. Columbus, Ohio: The Ohio State University, 1965.

11. The Center for Research and Leadership Development in Vocational and Technical Education, Petroleum and Petroleum Products: Sales and Service, Module No. 11. Columbus, Ohio: The Ohio State University, 1965.

12. The Center for Research and Leadership Development in Vocational and Technical Education, Miscellaneous Agricultural Supplies and Small Equipment: Sales and Service, Module No. 12. Columbus, Ohio: The Ohio State University, 1965.

13. Heaney, Donald S. Off-Farm Agricultural Occupations in Montana: Employment and Education, Thesis in Agricultural Education. Pennsylvania State University Graduate School, June, 1966.

14. Montana Cooperative Education Coordinator's Handbook, Office of State Superintendent of Public Instruction. Helena, Montana.

15. Research Coordinating Unit, Relationship of Vocational Technical Education To Jobs in the Montana Grain, Feed, Seed and Related Farm Supply Industries. Department of Public Instruction, Helena, Montana.

16. Loewen, Curtis E. A Curricular Model in Oriental Horticulture For Vocational Agriculture in Oregon. Oregon State University.

17. Powell, Thomas R. Factors Related To Employment Opportunities in Retail Fertilizer Distribution in Iowa, Ag Ed. Research Publication No. 19. Department of Education and Iowa Agriculture and Home Economics Experiment Station, Iowa State University of Science and Technology, Ames, Iowa.

18. Hamilton, William H. Competencies in Agriculture Needed by Males Employed In Retail Feed Distribution, Ag Ed. Research Publication No. 3. Department of Education and Iowa Agriculture and Home Economics Experiment Station, Iowa State University of Science and Technology, Ames, Iowa.

19. Division of Elementary and Secondary Education. Instructional Objectives: National Compendium. Department of Education, Tallahassee, Florida.

20. Agricultural Manpower Project, A Study of the Occupational Opportunities and Educational Needs in Montana's Agricultural Industry. Montana State University, Bozeman, Montana.

21. Grain, Feed, Seed and Farm Supply Technology, A Suggested Two-year Post-High School Curriculum, OE-81014. U.S. Department of Health, Education and Welfare.

22. Anoka Area Technical School. Two-year Post-High School Curriculum for Elevator Managers. Anoka, Minnesota.

23. Vocational-Technical Division. Two-year Post-High School Curriculum in Agribusiness. Northern Montana College, Havre, Montana.

APPENDIX A

COVERING LETTER

AND

SURVEY INSTRUMENT

Montana State University

Bozeman, Montana 59715

Department of Agricultural Education
College of Agriculture

July 10, 1972

TO: Members of Grain Trade

Montana is currently conducting a comprehensive analysis of its agricultural manpower needs. Early results indicate there are vacancies now and projected manpower needs in several areas of agribusiness. The grain, seed, feed and fertilizer businesses in Montana are areas where there will be continuing manpower needs in the foreseeable future.

Prior to the establishment of agricultural business curricula at two-year post-high school institutions such as area vocational technical schools or community colleges, it was felt desirable to determine the essential knowledge and skills needed by students prior to their becoming employed in a business such as yours. As a means of determining what should be included in school curricula, several broad subject matter areas have arbitrarily been selected. Within these areas suggested knowledge and skills students might develop while enrolled in two-year post-high school institutions have been delineated. A number of competencies are listed on the enclosed questionnaire. It would be greatly appreciated if you would take the time to indicate what you feel should be the relative importance of each listed competency. If you feel important competencies have been omitted, please add them. A rating scale appears behind each competency that is listed. The rating scale is as follows (please circle one of the five numbers for each competency):

1 -- No importance
2 -- Some importance
3 -- Average importance
4 -- Very important
5 -- Essential

In part V of the questionnaire we ask you to check "Yes" or "No."

This study is under the direction of Dr. Max Amberson of the Department of Agricultural Education, Montana State University in Bozeman. He has asked the trade to assist him in determining what competencies should be developed while students are enrolled in school. Your rating of these competencies will help to determine the course content of the school curricula in the grain, seed, feed and fertilizer area.

Sincerely yours,

A. H. Deutsch, Secretary
MINNEAPOLIS GRAIN EXCHANGE

AHD:mc

COMPETENCY QUESTIONNAIRE

NAME_____ ADDRESS_____

POSITION

Local Elevator Manager_____
Divisional Manager_____
District Superintendent_____
Educator_____
Other (Specify)_____

The purpose of this Questionnaire is to determine competencies needed for entry-level employees in the Grain, Seed, Feed and Fertilizer Business.

Please rate each competency listed by circling the number that you believe describes the importance of each skill for a beginning employee. Each competency is to be rated on a scale of 1 to 5, with 1 being of no importance and 5 being essential. Remember, you are being asked to indicate the knowledges and skills you desire a new employee to have before entering your company.

PART I

GRAIN AND SEED

Be Able To:	No Importance	Some Importance	Average Importance	Very Important	Essential
1. Determine from county crop reports potential volume of grain produced in elevator trade territory.	1	2	3	4	5

Be Able To:	No Importance	Some Importance	Average Importance	Very Important	Essential
2. Recommend accepted crop management practices to improve volume of grain produced.	1	2	3	4	5
3. Recommend crop varieties that will maximize returns in terms of yield and market acceptance.	1	2	3	4	5
4. Prepare a budget, estimating cost of production and returns per acre of major crops produced in area.	1	2	3	4	5
5. Assist in planning alternative cropping systems.	1	2	3	4	5
6. Recommend and make machinery adjustments which will result in harvesting quality grain.	1	2	3	4	5
7. Determine the adaptability of soils to crops to be grown.	1	2	3	4	5
8. Explain crop adaptation in terms of factors related to soil, climate and economics.	1	2	3	4	5
9. Identify soil problems that may be due to lack of drainage or lack of water.	1	2	3	4	5
10. Analyze costs and returns of such improvement projects as drainage, liming, fertilizer, etc.	1	2	3	4	5
11. Identify weeds and weed seed commonly found in crops grown locally.	1	2	3	4	5
12. Recommend weed control programs.	1	2	3	4	5

Be Able To:	No Importance	Some Importance	Average Importance	Very Important	Essential
13. Diagram an efficient facility layout for a modern grain, feed, seed and fertilizer operation.	1	2	3	4	5
14. Recommend the kinds of equipment commonly needed in a grain, feed, seed and fertilizer facility.	1	2	3	4	5
15. Operate and adjust equipment commonly used in a grain, feed, seed and fertilizer facility.	1	2	3	4	5
16. Determine the possible returns from different methods of selling grain.	1	2	3	4	5
17. Explain the relationship of cash grain prices to futures.	1	2	3	4	5
18. Develop a hedging program appropriate for a country elevator.	1	2	3	4	5
19. Develop a basis chart for various commodities.	1	2	3	4	5
20. Quote grain prices to farmers.	1	2	3	4	5
21. Draw a representative sample of grain from truck or car.	1	2	3	4	5
22. Identify various types of grain damage.	1	2	3	4	5
23. Grade grain according to USDA Grain Standards Act.	1	2	3	4	5
24. Conduct various types of tests to determine protein in grain.	1	2	3	4	5
25. Use balances, moisture testers, screens and dockage machines used in grading grain.	1	2	3	4	5

Be Able To:	No Importance	Some Importance	Average Importance	Very Important	Essential
26. Determine moisture in grain.	1	2	3	4	5
27. Compute cost of drying grain.	1	2	3	4	5
28. Compute weight loss incurred in drying grain.	1	2	3	4	5
29. Identify sources of grain contamination and recommend complete programs of grain sanitation.	1	2	3	4	5
30. Identify materials that might contaminate grain because of odors.	1	2	3	4	5
31. Recommend moisture levels for safe storage of grain.	1	2	3	4	5
32. Bin grain according to quality and condition.	1	2	3	4	5
33. Prepare a warehouse receipt.	1	2	3	4	5
34. Use aeration, drying and turning techniques to preserve grain quality.	1	2	3	4	5
35. Operate and read devices for detecting heating of grain in storage (hot spots).	1	2	3	4	5
36. Price grain based on grade, weight and quality.	1	2	3	4	5
37. Teat grain properly and safely for insect control.	1	2	3	4	5
38. Recommend and make proper bin preparation to insure safe storage of grain.	1	2	3	4	5
39. Care for and maintain scales.	1	2	3	4	5

Be Able To:	No Importance	Some Importance	Average Importance	Very Important	Essential
40. Weigh grain as it arrives at the elevator.	1	2	3	4	5
41. Prepare a scale ticket.	1	2	3	4	5
42. Blend various qualities of grain to meet grade.	1	2	3	4	5
43. Inspect grain containers to determine suitability for moving grain.	1	2	3	4	5
44. Load a car or truck with grain for shipment.	1	2	3	4	5
45. Prepare a Bill of Lading.	1	2	3	4	5
46. Explain the basic parts of the Uniform Grain Storage Agreement.	1	2	3	4	5
47. Conduct field inspection for producing certified seed.	1	2	3	4	5
48. Prepare seed to meet state certification laws.	1	2	3	4	5
49. Store seed to protect against moisture, insects, etc.	1	2	3	4	5
50. Test seed for germination.	1	2	3	4	5
51. Operate seed-treating and seed-cleaning equipment.	1	2	3	4	5
52. Identify seed-borne diseases.	1	2	3	4	5
53. Prepare labels for teated seed to meet government regulations.	1	2	3	4	5
54. Label and market seed in accordance with state laws.	1	2	3	4	5

Be Able To:	No Importance	Some Importance	Average Importance	Very Important	Essential
55. Analyze seed samples and properly label for sale.	1	2	3	4	5
56. Identify and correct unsafe practices in grain-handling equipment.	1	2	3	4	5
57. Detect and correct housekeeping practices that could cause fires.	1	2	3	4	5
58. Select proper equipment to combat fire.	1	2	3	4	5
59. Properly place equipment to combat fire.	1	2	3	4	5
60. Use fire-fighting equipment provided.	1	2	3	4	5
61. Detect and correct housekeeping practices that are safety hazards.	1	2	3	4	5

Other competencies you believe important to be developed by students preparing to enter the grain and seed area.

_____

_____

_____

_____

PART II

FEEDS

Be Able To:	No Importance	Some Importance	Average Importance	Very Important	Essential
1. Prepare a livestock or poultry feeding budget, estimating feed costs, value of product and return over feed costs.	1	2	3	4	5
2. Evaluate livestock quality and recommend compatible feeding programs.	1	2	3	4	5
3. Assist with planning alternative systems of livestock management.	1	2	3	4	5
4. Plan and develop mechanical feeding systems.	1	2	3	4	5
5. Plan alternative feeding programs for different types of livestock using feeds available in the area.	1	2	3	4	5
6. Formulate feeds so as to balance economically grains grown on the farm.	1	2	3	4	5
7. Determine the quality of hay and silage in terms of feeding value (judgment, lab analysis, etc.).	1	2	3	4	5
8. Identify economic and environmental factors that influence types of livestock and poultry which should be produced in an area.	1	2	3	4	5
9. Explain how environmental factors affect the feed efficiency of livestock enterprises.	1	2	3	4	5
10. Trace the passage of feed through digestive processes of various animals.	1	2	3	4	5

Be Able To:	No Importance	Some Importance	Average Importance	Very Important	Essential
11. Determine suitability of feeds for ruminants, nonruminants.	1	2	3	4	5
12. Determine the form (pelleted, rolled, ground, etc.) in which feeds should be prepared for livestock and poultry.	1	2	3	4	5
13. Determine feed needs in terms of nutrients for growth, production and reproduction.	1	2	3	4	5
14. Balance rations for different types of livestock and poultry of various ages.	1	2	3	4	5
15. Classify feeds in terms of nutrients and energy value.	1	2	3	4	5
16. Classify feeds according to mineral content.	1	2	3	4	5
17. Analyze feeds for fats, nitrogen, nitrogen-free extract, fiber and ash.	1	2	3	4	5
18. Compute the conversion of nitrogen from nonprotein sources to protein.	1	2	3	4	5
19. Read and explain the meaning of ingredients listed on a feed tag.	1	2	3	4	5
20. Substitute various feed ingredients in balancing rations.	1	2	3	4	5
21. Compute feed required for pound of grain for each major livestock group.	1	2	3	4	5
22. Recommend feed additives and medication in relation to cost and suitability.	1	2	3	4	5

Be Able To:	No Importance	Some Importance	Average Importance	Very Important	Essential
23. Explain the purpose of feed additives and medications.	1	2	3	4	5
24. Recommend the use of additives and medications in compliance with FDA standards.	1	2	3	4	5
25. Recommend feeding programs which will eliminate problems of chemical residues in meat, milk and eggs.	1	2	3	4	5
26. Identify symptoms in animals and birds suffering from deficiencies of essential nutritive elements in feeding rations.	1	2	3	4	5
27. Identify and plan corrective measures for common livestock diseases and parasites.	1	2	3	4	5
28. Identify hazards that may cause fire, injuries and poisoning to livestock and poultry.	1	2	3	4	5
29. Develop programs to eliminate potential hazards to livestock and poultry.	1	2	3	4	5
30. Plan and conduct feeding demonstrations.	1	2	3	4	5
31. Assist farmers and ranchers in determining the most economical weights to market livestock.	1	2	3	4	5
32. Determine when livestock is ready for market.	1	2	3	4	5
33. Suggest how livestock producers can use the futures market as a market tool.	1	2	3	4	5

	No Importance	Some Importance	Average Importance	Very Important	Essential
Be Able To:					
34. Demonstrate the techniques for successful farm and ranch calls.	1	2	3	4	5

Other competencies you believe important to be developed by students preparing to enter the feed area:

_____

_____

_____

_____

PART III

AGRICULTURAL CHEMICALS AND FERTILIZERS

Be Able To:	No Importance	Some Importance	Average Importance	Very Important	Essential
1. Compute costs and returns in determine the use of agricultural chemicals.	1	2	3	4	5
2. Name sources of information regarding laws and regulations governing the use of agricultural chemicals.	1	2	3	4	5
3. Recommend a fertilizer program (timing, placement, etc.).	1	2	3	4	5
4. Recommend proper time to use chemicals (weeds, crops, insects, etc.).	1	2	3	4	5
5. Time chemical applications to avoid residue problems.	1	2	3	4	5
6. Determine relative amounts of different kinds and types of fertilizers to be applied per acre.	1	2	3	4	5
7. Assist with planning alternative methods of fertilizer applications.	1	2	3	4	5
8. Explain the processes of manufacturing fertilizers.	1	2	3	4	5
9. Formulate fertilizers to specification.	1	2	3	4	5
10. Formulate herbicide-fertilizer mixtures.	1	2	3	4	5
11. Substitute fertilizer ingredients according to economic and agronomic conditions.	1	2	3	4	5
12. Plan and conduct fertilizer and agricultural chemical demonstrations.	1	2	3	4	5

Be Able To:	No Importance	Some Importance	Average Importance	Very Important	Essential
13. Recommend a safety program when working with fertilizers and chemicals.	1	2	3	4	5
14. Take soil samples for fertilizer analysis.	1	2	3	4	5
15. Interpret soil tests.	1	2	3	4	5
16. Test soils for pH levels.	1	2	3	4	5
17. Recommend treatment to adjust pH to appropriate levels.	1	2	3	4	5
18. Explain the importance of soil pH to plant adapability.	1	2	3	4	5
19. Explain the function of various chemical elements in plant growth.	1	2	3	4	5
20. Identify soil deficiencies from symptoms of growing plants.	1	2	3	4	5
21. Interpret chemical labels.	1	2	3	4	5
22. Compute amounts of active ingredients of chemicals to be used.	1	2	3	4	5
23. Weigh and measure relatively small quantities of chemicals.	1	2	3	4	5
24. Calibrate farm implements to apply specific amounts of chemicals.	1	2	3	4	5
25. Recondition fertilizers after lengthy storage	1	2	3	4	5
26. Store fertilizers to avoid storage problems.	1	2	3	4	5

Be Able To:	No Importance	Some Importance	Average Importance	Very Important	Essential
27. Post animals or birds to determine internal parasites.	1	2	3	4	5
28. Recommend treatment for animals and poultry suffering from parasites.	1	2	3	4	5
29. Identify and classify insect damage.	1	2	3	4	5
30. Recommend insecticides needed.	1	2	3	4	5

Other competencies you believe important to be developed by the student preparing to enter the agriculture chemical and fertilizer area:

_____

_____

_____

_____

PART IV

BUSINESS MANAGEMENT

Be Able To:	No Importance	Some Importance	Average Importance	Very Important	Essential
Organization					
1. Understand the types of business organization.	1	2	3	4	5
2. Understand the advantages and disadvantages of different types of business organization.	1	2	3	4	5
3. Understand the sources of capital for each type of business.	1	2	3	4	5
4. Understand how each type of business organization divides its profits or losses.	1	2	3	4	5
5. Understand the importance and the function of business profits.	1	2	3	4	5
6. Understand and be able to apply the basic requirements for starting a business.	1	2	3	4	5
7. Understand and be able to apply the basic principles of economics to distribution and marketing of grain, seed, feed and fertilizer.	1	2	3	4	5
8. Understand the legal responsiblity of a business serving the public.	1	2	3	4	5
9. Understand federal and state laws regarding grain, feed, seed and fertilizer business.	1	2	3	4	5
10. Develop objectives for the business that can be used by management to promote business growth.	1	2	3	4	5
11. Use business goals for preparing a total business budget.	1	2	3	4	5

Be Able To:	No Importance	Some Importance	Average Importance	Very Important	Essential
12. Understand the role of prices in the marketplace.	1	2	3	4	5
13. Prepare and interpret a financial statement for the business.	1	2	3	4	5
Credit and Sales Techniques					
14. Develop a sound credit policy for a grain, feed, seed and fertilizer business.	1	2	3	4	5
15. Identify and recommend sources of credit available in the community.	1	2	3	4	5
16. Compute the cost of granting credit.	1	2	3	4	5
17. Evaluate financial statements to determine credit risks of farmers and ranchers.	1	2	3	4	5
18. Estimate customer wants and needs from past records.	1	2	3	4	5
19. Conduct a market survey.	1	2	3	4	5
20. Recognize potential customers identified from market studies.	1	2	3	4	5
21. Organize and conduct clinics for customers and staff members.	1	2	3	4	5
22. Prepare and present demonstrations.	1	2	3	4	5
23. Organize and conduct sales meetings.	1	2	3	4	5
24. Demonstrate use of different types of sales techniques (telephone, face-to-face, etc.).	1	2	3	4	5

Be Able To:	No Importance	Some Importance	Average Importance	Very Important	Essential
25. Demonstrate the steps of successful selling.	1	2	3	4	5
26. Locate sources of market information.	1	2	3	4	5
27. Interpret market information in market bulletins, newspapers and radio.	1	2	3	4	5
28. Prepare clear, concise written reports.	1	2	3	4	5
29. Prepare and present public speeches.	1	2	3	4	5
30. Prepare radio and TV scripts.	1	2	3	4	5
31. Prepare news releases.	1	2	3	4	5
32. Prepare letters to customers.	1	2	3	4	5
33. Organize a facility for effective merchandising.	1	2	3	4	5
34. Develop a system of inventory control.	1	2	3	4	5
35. Compute markup.	1	2	3	4	5
36. Compute margins.	1	2	3	4	5
37. Explain the relationship of markup to margin.	1	2	3	4	5
38. Prepare an advertising budget.	1	2	3	4	5
39. Develop an advertising calendar.	1	2	3	4	5
40. Write advertising.	1	2	3	4	5
41. Plan and carry out promotion days.	1	2	3	4	5
42. Design displays.	1	2	3	4	5
43. Explain and use contracts and other legal instruments needed in the business operation.	1	2	3	4	5
44. Prepare a purchase order.	1	2	3	4	5

Be Able To:	No Importance	Some Importance	Average Importance	Very Important	Essential
45. Close a sale.	1	2	3	4	5
46. Write up a sales ticket.	1	2	3	4	5
Personal					
47. Demonstrate a willingness to work.	1	2	3	4	5
48. Demonstrate the ability to work on his own.	1	2	3	4	5
49. Demonstrate the ability to get along with others.	1	2	3	4	5
50. Demonstrate the ability to project a desirable image for firm.	1	2	3	4	5
51. Use the telephone for business transactions.	1	2	3	4	5
52. Empathize with the customer.	1	2	3	4	5
53. See and respect the customer's point of view.	1	2	3	4	5

Other competencies you believe important to be developed by the student preparing to enter the business management area:

_____

_____

_____

_____

PART V

OCCUPATIONAL EXPERIENCE PROGRAM

Most two-year post-high school curricula training technicians provide three to six months of supervised occupational experience. This on-the-job training gives the student an opportunity to relate classroom and laboratory experience to the actual skills required on the job. You are asked to give an indication of how you regard the importance of supervised occupational experience.

	Not Important	Very Important	Essential
A supervised occupational experience program is (check one)			

If you feel that a supervised occupational program is very important or essential in the training of young people for your industry, circle the reason or reasons why.

1. Provides an employer an opportunity to evaluate employee - employer relationships.	Yes	No
2. Offers a student an opportunity for exploration experience.	Yes	No
3. Offers a student an opportunity for some management responsiblities.	Yes	No
4. Provides a student the opportunity to demonstrate reliability.	Yes	No
5. Provides a student an opportunity to learn activities that cannot be learned in the classroom.	Yes	No

6.	Gives the student an opportunity to demonstrate initiative.	Yes	No
7.	Provides an opportunity to evaluate a student's attitude concerning dress and grooming.	Yes	No
8.	Provides an opportunity to evaluate how a student applies himself to the job.	Yes	No
9.	Provides an opportunity to evaluate a student's attitude toward work.	Yes	No
10.	Provides an opportunity to evaluate such traits as courtesy, loyalty, honesty, etc., in a prospective employee.	Yes	No
11.	Provides the student with the opportunity to experience, under actual conditions, what it is to work in an agribusiness.	Yes	No
12.	Provides the student the opportunity to learn new skills.	Yes	No
13.	Provides the student the opportunity to manage his own time and the time of others.	Yes	No
14.	Provides the student the opportunity to make judgment decisions.	Yes	No
15.	Provides the student the opportunity to assume responsibility.	Yes	No
16.	Provides the student the opportunity to search for ways to increase productivity.	Yes	No
17.	Provides the student the opportunity to demonstrate a respect for excellence in performance.	Yes	No

18. Provides the student with the opportunity to demonstrate loyalty to the firm and to fellow employees. Yes No

19. Provides the student the opportunity to demonstrate a willingness to dress in a manner acceptable to an employer. Yes No

20. Provides the student the opportunity to demonstrate the essentials of good grooming. Yes No

Other competencies you believe important that can be developed through the Occupational Experience Program:

_____

_____

_____

_____